



Digital Opportunity

A Review of Intellectual Property and Growth

An Independent Report by
Professor Ian Hargreaves

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When the Prime Minister commissioned this review in November 2010, he did so in terms which some considered provocative. The Review was needed, the PM said, because of the risk that the current intellectual property framework might not be sufficiently well designed to promote innovation and growth in the UK economy.

In the five months we have had to compile the Review, we have sought never to lose sight of David Cameron's "exam question". Could it be true that laws designed more than three centuries ago with the express purpose of creating economic incentives for innovation by protecting creators' rights are today obstructing innovation and economic growth?

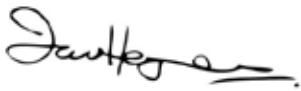
The short answer is: yes. We have found that the UK's intellectual property framework, especially with regard to copyright, is falling behind what is needed. Copyright, once the exclusive concern of authors and their publishers, is today preventing medical researchers studying data and text in pursuit of new treatments. Copying has become basic to numerous industrial processes, as well as to a burgeoning service economy based upon the internet. The UK cannot afford to let a legal framework designed around artists impede vigorous participation in these emerging business sectors.

This does not mean, however, that we must put our hugely important creative industries at risk. Indeed, these businesses too need change, in the form of more open, contestable and effective global markets in digital content and a setting in which enforcement of copyright becomes effective once more.

The Review sets out how this can be achieved. We have focused upon the main issues, at the risk of ignoring important points of detail, and have tried to set out a clear, strategic argument, supported with just ten recommendations. We are also making available online a number of documents which explore the available evidence and submissions made to the Review. If the Review's recommendations are followed, the result will be more innovation and more economic growth.

Our intellectual property framework will face further significant pressure to adapt in the coming years, as we make our way into the third decade of the commercial internet. We urge Government to ensure that in future, policy on Intellectual Property issues is constructed on the basis of evidence, rather than weight of lobbying, and to ensure that the institutions upon which we depend to deliver intellectual property policy have clear mandates and adaptive capability. Without that, the pile of IP reviews on the Government's doorstep – four in the last six years – will continue to accumulate.

I would like to conclude by thanking the team, based in the Intellectual Property Office, which has worked with me to deliver this independent review. Because it is independent, I bear responsibility for its content, but I have relied very heavily upon the expertise and unstinting hard work of the IPO team. I also owe a debt to the group of five experts who agreed to serve as the Review's advisory panel: Roger Burt, James Boyle, Mark Schankerman, David Gann and Tom Loosemore. As individuals with strong views and great expertise, they did so on the basis that they would not *necessarily* be bound by the Review's conclusions. Their advice has been generous and of the highest quality. I also thank the almost 300 individuals and organisations who gave written evidence to the Review. It was from these submissions that I learned the most.



Ian Hargreaves, May, 2011.

Intellectual Property is important to growth...

In advanced economies like the UK's, innovation is crucial to competitive edge. That makes Intellectual Property (IP) policy an increasingly important tool for stimulating economic growth.

Every year in the last decade, investment by UK business in intangible assets has outstripped investment in tangible assets: by £137 billion to £104 billion in 2008. Global trade in IP licences alone is worth more than £600 billion a year: five per cent of world trade and rising. Small and young innovative firms are of crucial importance in terms of growth and jobs but proliferating use of IP rights can push up IP transaction costs and block these new players from entering markets.

The IP framework is falling behind and must adapt...

IP law must adapt to change. Digital communications technology involves routine copying of text, images and data, meaning that copyright law has started to act as a regulatory barrier to the creation of certain kinds of new, internet based businesses.

With two thirds of the world's population yet to achieve direct connection to the internet, this digital revolution has by no means run its course (Chapter 1).

The Prime Minister asked the Review to consider whether our IP framework needs to adapt in the interests of encouraging innovation and growth. The Review's conclusion is that such adaptation is required. The UK's current IP system is falling behind what is needed, especially in the area of copyright.

Evidence should drive policy...

Throughout the Review, we have sought to base our judgments on economic evidence and we advise Government to frame its policy decisions on that basis (Chapter 2).

This is especially important at the international level, where large interests collide, making progress towards international agreement on IP issues frustratingly slow. The UK has a great deal to gain from such agreements, which will support a further strong growth in the global trade in intangibles. The Review supports a number of international initiatives and identifies the achievement of a unified EU patent court and EU patent system as the top priority (Chapter 3).

A digital copyright exchange will facilitate copyright licensing and realise the growth potential of creative industries...

In copyright, the interests of the UK's creative industries are of great national importance. Digital creative industries exports rank third, behind only advanced engineering and financial and professional services. In order to grow these creative businesses further globally, they need efficient, open and effective digital markets at home, where rights can be speedily licensed and effectively protected.

Numerous responses to the Review's *Call for Evidence* drew attention to defects in licensing procedures, among them those of the CBI, News Corporation, Pearson, Reed Elsevier, an alliance of UK photographers and the European Publishers Council. Having studied these and several other proposals, including the Google Books Agreement recently struck down by the courts in the United States, the Review proposes that Government brings together rights holders and other business interests to create in the UK the world's first Digital Copyright Exchange.

This will make it easier for rights owners, small and large, to sell licences in their work and for others to buy them. It will make market transactions faster, more automated and cheaper. The result will be a UK market in digital copyright which is better informed and more readily capable of resolving disputes without costly litigation.

The prize is to build on the UK's current competitive advantage in creative content to become a leader in providing the services global players use to license their content for world content markets.

Further steps to modernise copyright licensing...

Supported by other moves to achieve easier cross border licensing in the EU, bulk licensing of large digital collections and a common code of practice for copyright collecting societies, the UK can aspire to be the leading service support centre for IP matters in the European time zone.

At the same time, Government should take long overdue action to update copyright law in ways designed to increase consumer confidence in the way the law works. It should begin by legislating to release for use the vast treasure trove of copyright works which are effectively unavailable – “orphan works” – to which access is in practice barred because the copyright holder cannot be traced. This is a move with no economic downside (Chapter 4).

Copying should be lawful where it is for private purposes, or does not damage the underlying aims of copyright...

The UK has chosen not to exercise all of its rights under EU law to permit individuals to shift the format of a piece of music or video for personal use and to make use of copyright material in parody. Nor does the UK allow its great libraries to archive all digital copyright material, with the result that much of it is rotting away. Taking advantage of these EU sanctioned exceptions will bring important cultural as well as economic benefits to the UK. Together, they will help to make copyright law better understood and more acceptable to the public. In addition, there should be a change in rules to enable scientific and other researchers to use modern text and data mining techniques, which copyright prohibits.

Building future proofing into the legislative and regulatory framework...

The Review considered whether the more comprehensive American approach to copyright exceptions, based upon the so called Fair Use defence, would be beneficial in the UK. We concluded that importing Fair Use wholesale was unlikely to be legally feasible in Europe and that the UK could achieve many of its benefits by taking up copyright exceptions already permitted under EU law and arguing for an additional exception, designed to enable EU copyright law to accommodate future technological change where it does not threaten copyright owners. This would permit copying where it does not trade on the underlying creative and expressive purpose on which traditional rights holders in music, publishing, film and television rely (Chapter 5).

The copyright regime cannot be considered fit for the digital age when millions of citizens are in daily breach of copyright, simply for shifting a piece of music or video from one device to another. People are confused about what is allowed and what is not, with the risk that the law falls into disrepute. The changes recommended above will help change this, and the Review also proposes a new role for the Intellectual Property Office (IPO) in issuing formal opinions to help clarify the law where it is not understood or where new developments in technology and markets create fresh uncertainties.

Adapting the patent and design frameworks to changing circumstances....

Technological pressures are also at work in the patent system, where there is very strong growth in levels of patenting, especially in computer programs and telecommunications. This patenting boom is leading to problems of patent office backlogs and the emergence of so called “patent thickets”, which obstruct entry to some markets and so impede innovation. International cooperation is the key to addressing backlogs and thickets, possibly through a coordinated adjustment of fee structures to weed out lower value patents (Chapter 6).

Action is also called for with regard to the UK’s important and growing design sector – the largest source of intangible investment in the economy. Designers believe a patchwork of intellectual property right (IPR) provision puts them at a disadvantage in comparison with sectors fully covered by copyright law. With the emergence of fabrication through 3D printing, new technological challenges also arise, indicating the need for a thorough reassessment of IP and design (Chapter 7).

Effective enforcement requires education, effective markets, an appropriate enforcement regime and a modern legal framework...

A theme which connects all areas of IP is enforcement. IPRs cannot succeed in their core economic function of incentivising innovation if rights are disregarded or are too expensive to enforce. Ineffective rights regimes are worse than no rights at all: they appear to offer certainty and support for reliable business models, but in practice send misleading signals. Widespread disregard for the law erodes the certainty that underpins consumer and investor confidence. In the most serious cases, it destroys the social solidarity which enables the law abiding majority to unite against a criminal minority. These are powerful reasons for supporting effective enforcement of IPRs.

The question is: in a digital world, where copying and distribution are more or less free, what does an effective regime look like?

No one doubts that a great deal of copyright piracy is taking place, but reliable data about scale and trends is surprisingly scarce. Estimates of the scale of illegal digital downloads in the UK ranges between 13 per cent and 65 per cent in two studies published last year. A detailed survey of UK and international data finds that very little of it is supported by transparent research criteria. Meanwhile sales and profitability levels in most creative business sectors appear to be holding up reasonably well. We conclude that many creative businesses are experiencing turbulence from digital copyright infringement, but that at the level of the whole economy, measurable impacts are not as stark as is sometimes suggested.

Such research as exists indicates that we should be wary of expecting tougher enforcement alone to solve the problem of copyright infringement. Instead, Government should respond in four ways: by modernising copyright law; through education; through enforcement and by doing all it can to encourage open and competitive markets in licensed digital content, which will result in more legitimate digital content at prices which appeal to consumers. The strong online enforcement measures made possible by the Digital Economy Act should be carefully monitored so that the approach can be adjusted in the light of evidence. Bearing in mind that many IP disputes involve claims of small value, and the importance of these to smaller businesses, Government should also introduce a small claims track for IP cases in the courts (Chapter 8).

Helping SMEs to realise the potential of IP....

A theme throughout the Review is the importance of smaller companies to innovation and to job creation. Small and medium enterprises (SMEs) will benefit from most of the changes recommended in this review: from the single European patent and easier copyright licensing to a better rights framework for design and steps to control patent thickets. Research undertaken by the Review also confirms that SMEs are not sufficiently well served by those providing advice and information on IPRs. We recommend action to give SMEs access to lower cost IP advice (Chapter 9).

Creating an IP framework which adapts to changes in technology and markets requires changes to the IPO...

Another theme in the Review is the importance of an IP framework which adapts well to changes in technology and markets. The frequency of major reviews of IP (four in the last six years) indicates the shortcomings of the UK system. In the 1970s, the Banks Review deplored the lack of evidence to support policy judgments, as did the Gowers Review five years ago. Of the 54 recommendations advanced by Gowers, only 25 have been implemented. On copyright issues, lobbying on behalf of rights owners has been more persuasive to Ministers than economic impact assessments.

If the current Government wishes to ensure that the IPO is focused on promoting innovation and growth through policies based on evidence, it will have to make institutional changes. This would involve giving the IPO, for the first time, an overarching legal mandate to pursue economic objectives, along with the powers to access data so that it can, for example, make evidence based recommendations to the UK competition authorities. In order to improve clarity on interpreting copyright issues and keep in touch with new developments in markets, the IPO should be able to issue statutory opinions, which the courts would be obliged to take account of in relevant cases (Chapter 10).

In summary...

Taken together, the Review proposes a clear change in the strategic direction of IP policy direction designed to ensure that the UK has an IP framework best suited to supporting innovation and promoting economic growth in the digital age. This change is modest in ambition and wholly achievable.

The Review's specific recommendations would support growth of the UK's increasingly intangibles intensive economy. This requires:

- an efficient digital copyright licensing system, where nothing is unusable because the rights owner cannot be found;
- an approach to exceptions in copyright which encourages successful new digital technology businesses both within and beyond the creative industries;
- a patent system capable of preventing heavy demand for patents causing serious barriers to market entry in critical technologies;
- reliable and affordable advice for smaller companies, to enable them to thrive in the IP intensive parts of the UK economy;
- refreshed institutional governance of the UK's IP system which enables it to adapt organically to change in technology and markets.

If the Review's recommendations are acted upon, the result will be stronger rates of innovation and increased economic growth. An economic impact assessment conducted by the Review team, and of course subject to the high degree of uncertainty inherent in such projections, estimates that this would add between 0.3 per cent and 0.6 per cent to annual GDP growth. The path laid down in this review would also, over time, mean that IP law, including copyright law, would become clearer and be observed by most people without controversy.

Recommendations

1. Evidence. Government should ensure that development of the IP System is driven as far as possible by objective evidence. Policy should balance measurable economic objectives against social goals and potential benefits for rights holders against impacts on consumers and other interests. These concerns will be of particular importance in assessing future claims to extend rights or in determining desirable limits to rights.

2. International priorities. The UK should resolutely pursue its international interests in IP, particularly with respect to emerging economies such as China and India, based upon positions grounded in economic evidence. It should attach the highest immediate priority to achieving a unified EU patent court and EU patent system, which promises significant economic benefits to UK business. The UK should work to make the Patent Cooperation Treaty a more effective vehicle for international processing of patent applications.

3. Copyright licensing.

- In order to boost UK firms' access to transparent, contestable and global digital markets, the UK should establish a cross sectoral Digital Copyright Exchange. Government should appoint a senior figure to oversee its design and implementation by the end of 2012. A range of incentives and disincentives will be needed to encourage rights holders and others to take part. Governance should reflect the interests of participants, working to an agreed code of practice.
- The UK should support moves by the European Commission to establish a framework for cross border copyright licensing, with clear benefits to the UK as a major exporter of copyright works. Collecting societies should be required by law to adopt codes of practice, approved by the IPO and the UK competition authorities, to ensure that they operate in a way that is consistent with the further development of efficient, open markets.

4. Orphan works. The Government should legislate to enable licensing of orphan works. This should establish extended collective licensing for mass licensing of orphan works, and a clearance procedure for use of individual works. In both cases, a work should only be treated as an orphan if it cannot be found by search of the databases involved in the proposed Digital Copyright Exchange.

5. Limits to copyright. Government should firmly resist over regulation of activities which do not prejudice the central objective of copyright, namely the provision of incentives to creators. Government should deliver copyright exceptions at national level to realise all the opportunities within the EU framework, including format shifting, parody, non-commercial research, and library archiving. The UK should also promote at EU level an exception to support text and data analytics. The UK should give a lead at EU level to develop a further copyright exception designed to build into the EU framework adaptability to new technologies. This would be designed to allow uses enabled by technology of works in ways which do not directly trade on the underlying creative and expressive purpose of the work. The Government should also legislate to ensure that these and other copyright exceptions are protected from override by contract.

6. Patent thickets and other obstructions to innovation. In order to limit the effects of these barriers to innovation, the Government should:

- take a leading role in promoting international efforts to cut backlogs and manage the boom in patent applications by further extending “work sharing” with patent offices in other countries;
- work to ensure patents are not extended into sectors, such as non-technical computer programs and business methods, which they do not currently cover, without clear evidence of benefit;
- investigate ways of limiting adverse consequences of patent thickets, including by working with international partners to establish a patent fee structure set by reference to innovation and growth goals rather than solely by reference to patent office running costs. The structure of patent renewal fees might be adjusted to encourage patentees to assess more carefully the value of maintaining lower value patents, so reducing the density of patent thickets.

7. The design industry. The role of IP in supporting this important branch of the creative economy has been neglected. In the next 12 months, the IPO should conduct an evidence based assessment of the relationship between design rights and innovation, with a view to establishing a firmer basis for evaluating policy at the UK and European level. The assessment should include exploration with design interests of whether access to the proposed Digital Copyright Exchange would help creators protect and market their designs and help users better achieve legally compliant access to designs.

8. Enforcement of IP rights. The Government should pursue an integrated approach based upon enforcement, education and, crucially, measures to strengthen and grow legitimate markets in copyright and other IP protected fields. When the enforcement regime set out in the DEA becomes operational next year its impact should be carefully monitored and compared with experience in other countries, in order to provide the insight needed to adjust enforcement mechanisms as market conditions evolve. This is urgent and Ofcom should not wait until then to establish its benchmarks and begin building data on trends. In order to support rights holders in enforcing their rights the Government should introduce a small claims track for low monetary value IP claims in the Patents County Court.

9. Small firm access to IP advice. The IPO should draw up plans to improve accessibility of the IP system to smaller companies who will benefit from it. This should involve access to lower cost providers of integrated IP legal and commercial advice.

10. An IP system responsive to change. The IPO should be given the necessary powers and mandate in law to ensure that it focuses on its central task of ensuring that the UK’s IP system promotes innovation and growth through efficient, contestable markets. It should be empowered to issue statutory opinions where these will help clarify copyright law. As an element of improved transparency and adaptability, Government should ensure that by the end of 2013, the IPO publishes an assessment of the impact of those measures advocated in this review which have been accepted by Government.

Chapter 1

Intellectual Property and Growth

1.1 Today's advanced economies live or die by their ability to get smarter. Growth comes not from competing on labour costs, raw materials or access to capital: our competitive edge depends on our capacity to innovate, especially in the high margin, knowledge intensive businesses which now exist across all sectors of the UK economy.¹

1.2 The UK's long term growth depends on these firms. These are also the companies most affected by our Intellectual Property (IP) system.² That is the context for this review, which the Prime Minister launched in November, with a mandate to examine how to ensure that our IP framework does the best possible job in encouraging innovation and growth.

1.3 Intellectual Property Rights (IPRs) support growth by promoting innovation through the offer of a temporary monopoly to creators and inventors. But such rights can also stifle growth where transaction costs are high or rights are fragmented in a way that makes them hard to access. Poorly designed IP rules can help established players in a market obstruct new players by impeding their access to technology and content. A carefully designed and dynamic IP system can, by contrast, complement the spur which competition gives to innovation by enabling follow on-innovation.

1.4 Policy should start from careful assessment of these costs and benefits in the light of evidence and accepted economic theory. At the same time, non-economic factors meriting consideration (such as the important moral rights of authors not to have their work misrepresented) can be weighed in the balance.

Why IP Matters to Growth

1.5 It is widely accepted that the most important driver of long term economic growth is improved productivity.³ Over the last decade the majority of productivity growth and job creation has come from innovation,⁴ primarily by small and young firms. These innovative firms "grow twice as fast, both in employment and sales, as firms that fail to innovate"⁵ and the more contestable their market is, the faster productivity grows in that market.⁶ At the same time, innovation creates and grows new markets for things that have not been seen or done before. These factors combined indicate that innovative firms are key to the UK's future economic growth.

1.6 Participants in competitive markets have a strong reason to innovate to create and capture new value, and competition is the strongest incentive for firms to innovate.⁷ In the words of Ed McCabe: “creativity is one of the last remaining legal ways of gaining an unfair advantage over the competition.”⁸ However, creativity and innovation involves private cost, such as lost earnings while writing a book or Research and Development (R&D) investment in drug research. It also involves the risk that new products will fail. Moreover, once created, innovative output may cost very little to reproduce: drugs or books may be cheaply copied by others.

1.7 Where innovation is difficult to copy, or there are large rewards for being first to market with a product, the competitive spur to innovation is effective. In other circumstances, these risks and costs are a disincentive to innovate. That is why we need intellectual property rights.

1.8 IPRs (the major rights being patents, copyright, design rights, and trade marksⁱ) incentivise innovation through the offer of a time-limited return on innovative investment. This reduces the risk in inventing and creating new products, so stimulating innovation, competition and stronger economic growth. By agreeing to share the full technical workings of any patented invention, the IPR system also encourages follow on innovation as information about technology is disseminated.

1.9 Because IPRs grant a form of monopoly, an overly rigid and inflexible IP framework can act as a barrier to innovation. When a firm has acquired exclusive rights over its innovative technology or content, other firms will be able to learn from that technology or see the content, but may be unable to use them for further innovation unless licensing can be agreed. IPRs can constrain third parties wishing to access or innovate on top of this protected knowledge or content, with potentially serious economic and social costs.

1.10 Furthermore, IP systems impose transaction costs on the creator, on innovators and on society. The costs of search, administration and enforcement, which fall on creators and innovators, directly offset the incentives they receive through exclusivity. So the rewards to innovation can sometimes be boosted as effectively by cutting transaction costs as by strengthening rights. The optimal balance between these factors varies by industry and technology – in complex markets requiring multiple rights transaction costs can be especially onerous. And the expertise required to deal with IPRs is largely a fixed cost: it falls harder on smaller firms trying to establish rights than on large incumbents.

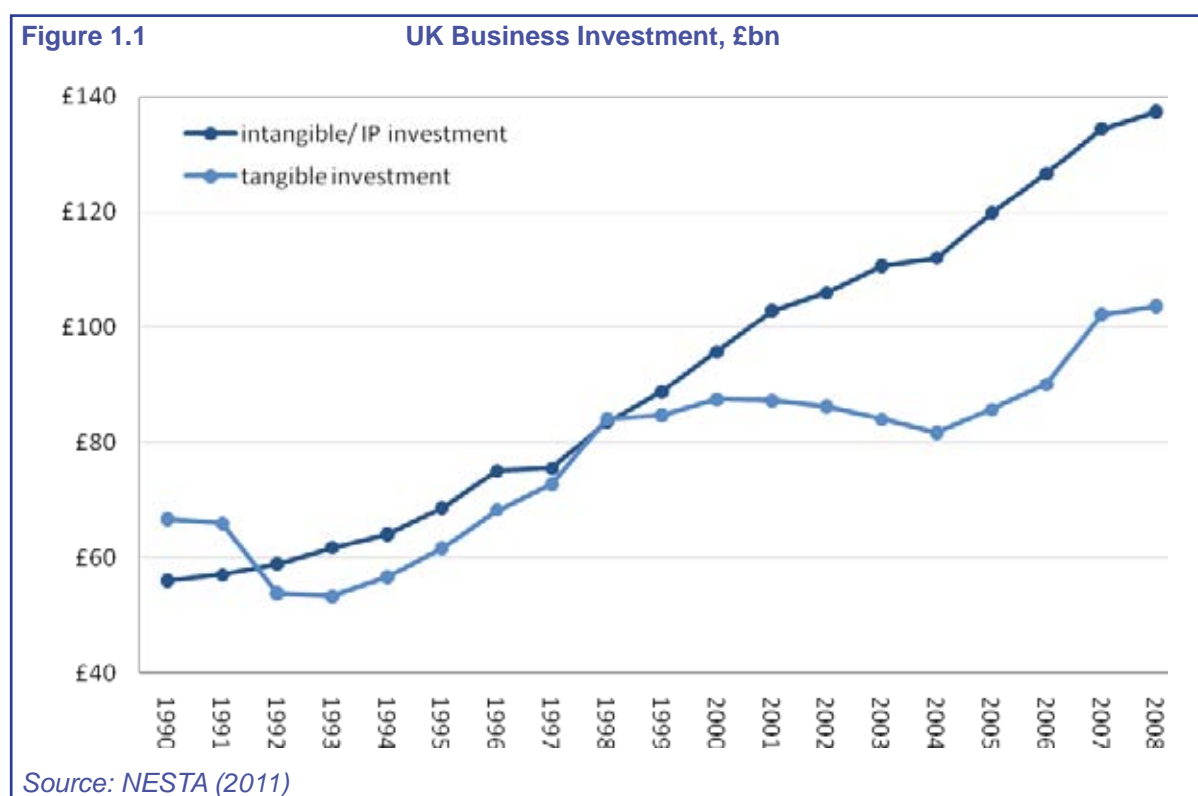
i The main features of the principal IPRs are as follows.

- Patents protect technical features and processes, ie inventions. They reserve to the patent owner the right to make, use, import or sell the invention. They last up to 20 years, subject to payment of an annual renewal fee.
- Copyright gives automatic protection (i.e. registration is not necessary) to original written, dramatic, musical and artistic works, published editions of works, sound recordings, films and broadcasts. Creator's copyright generally lasts until 70 years after death.
- Trade Marks protect any sign that distinguishes goods and services from competitors'. They can be maintained indefinitely subject to renewal every 10 years.
- Design rights protect the physical appearance and visual appeal of products. Registered designs can be maintained up to 25 years subject to the payment of a renewal fee every five years. Unregistered designs are automatic and only protect three dimensional aspects of a design, excluding surface ornamentation. They last for up to 15 years.

1.11 The costs imposed by IP systems on society are wider. They include the “deadweight” costs which flow from limiting competition and sustaining higher prices. A classic example is the effect of extending the duration of copyright, which boosts the income of rights holders, but increases costs to consumers not only by the additional payment but also by its costs of collection.

The Changing World

1.12 As advanced economies become ever more knowledge intensive, the stakes involved in IP are rising. Profound and far from complete economic and technological changes mean that an appropriate and enabling IP framework has become one of the prerequisites for prosperity. IP related spending has come to dominate firms’ investment across the developed world while services now dominate these economies.⁹ UK firms spent £137 billion on intangible investment, or investment in IP, compared to £104 billion on fixed assets in 2008 (see Figure 1.1).¹⁰ This investment in IP is worth 13 per cent of market gross value added (GVA), with almost half of it covered by IPRs.¹¹ Global trade in patent and creative industry licences alone is now worth more than £600 billion a year, over five per cent of all world trade - and rising.¹²



The Innovation Ecosystem

1.13 Small and young innovative firms are playing an increasing role in job creation. They represent only six per cent of UK firms with more than 10 employees but they have created 54 per cent of all new jobs since 2002,¹³ although churn amongst Small and Medium Enterprises (SMEs) remains high and their contribution to *net* employment is lower than this.¹⁴ At the same time, larger firms continue to play a crucial but changing role in innovation, with less emphasis on in-house R&D

and increased partnerships with smaller companies developing new technologies. These trends are very apparent in, for example, the biotechnology and software sectors. Hence the relationship between SMEs and larger firms can be symbiotic: they provide each other with direct support for innovative thinking and work together on R&D. Larger firms then provide routes to new and emerging markets for smaller firms.

1.14 Another shift in the innovation ecosystem is the increasing internationalisation of research – in 2007 the top 50 European corporate R&D spenders spent \$51 billion of their \$117 billion total R&D spend overseas.¹⁵ This shift in the landscape changes the pattern of how firms have to manage their still largely nation-specific IPRs and indicate the importance of policy makers taking an international approach to IP systems.

The Increasing Impacts of Transaction Costs

1.15 IP transaction costs have risen as rights users navigate an ever more densely populated landscape of increasingly subdivided rights. This presents a risk analogous to the problem familiar in the world of planning, where small ownership interests can block value generating large developments. In the patent world, a surfeit of property rights can mean that the transaction cost of acquiring permission to innovate or create new work is prohibitively high. Research shows that in certain technology fields this can cause a kind of gridlock with innovation delayed or even prevented.¹⁶ Michael Heller, an American law professor, coined the phrase “tragedy of the anticommons” to describe this situation,¹⁷ which he says has resulted in significant blockages in areas such as medical research.¹⁸

1.16 In the copyright area transaction costs can create similar problems. Digital technologies have brought large reductions in the cost of copying, storage and distribution for words, music, images and all forms of data. This has the effect of making transaction costs around rights a much more significant element in the business equation and so, potentially, a likelier barrier to licensing and follow on innovation.

The Transforming Effects of Digital Technology

1.17 Digital technology is probably the most important and transformative technology of our time. Because digital is fundamentally an information and communication technology (ICT), intellectual property rights lie at its heart. Not only has ICT adoption and use been among the strongest drivers of growth,¹⁹ but it has pushed content and communication technology into new uses, meaning the IP system has become part of people’s daily lives.²⁰ This has transformed us all into regular, if not daily, copyright creators and allows firms to capture information on customers and transactions in ways that help them experiment in real time with business models and marketing approaches.²¹ Digital also gives firms the opportunity to market themselves locally, nationally and internationally at relatively low cost, reaching previously inaccessible customers. These are already unprecedentedly global markets, even though the internet has yet to be used directly by two thirds of the world’s population.²²

1.18 Because copyright governs the right to own and use data and information, as well as the output of authors, musicians, photographers and film makers, copyright law is now of primary interest to players across the whole of the knowledge economy, not just those involved in the creative industries. Digital technologies are based on copying, so copyright becomes their regulator: a role it was never designed to perform.

Services and the New Innovation Process

1.19 The services which provide most jobs in advanced economies are being changed in other ways by digital technology. Innovations in the insurance industry, for example, rely upon improved data from medicine, demographics and profiling of individual customer lifestyles. Risk calculations applied to premiums for farmers and event organisers rely upon improved data analysis of weather patterns. Sophisticated assessment of safer cars and better roads can be factored into motor insurance judgments. Understanding these connections and computing the related business risks requires knowledge of what happens at boundaries between systems and the ability to analyse large quantities of data from what, until recently, were separate industries and sectors.

1.20 Collaborative and more “open” distributed innovation processes are especially important because services are not produced in the laboratories and factories of the industrial R&D arena where they can be tested and optimised. Services are usually produced at the point at which they are consumed: the act of consumption rather than invention is the focal point for innovation.

1.21 New services are therefore developed using a “market facing” approach, often connected to information databases generated by people and organisations that articulate and express their requirements and demands as they experience the innovation. This is sometimes described as a more democratic approach to innovation, where companies trial different approaches – such as beta versions of web pages – and respond to user feedback. It also, however, frequently relies upon the ability to analyse large and complex volumes of data copied between machines, potentially raising multiple copyright issues.

1.22 The nature of services innovation implies that answers to technical problems will not lie exclusively within research institutions or companies with proprietary R&D cultures and the means to manage and protect IP. Instead, they will emerge through integration of ideas from a wide range of organisations, some of whom may consider managing IPR to be an unacceptable obstacle in a high value business, raising further challenges to traditional concepts of ownership of IP.

The Next Wave – Cloud Computing and the Internet of Things

1.23 The next wave of digital technologies and services is likely to create opportunities and disruptions in a very broad range of industries. The internet of things – billions of devices and components with an internet address, enabling them to communicate in massive sensing systems – coupled with cloud computing, will underpin more sophisticated applications, and thereby a host of new services: digital wallets will replace cheques and credit cards; personalised electronic adverts will compete with static hoardings; transport, electricity, power and water systems will provide a continuous

real time update of their performance and user status. Firms will offer us advice and services built on analysis of this kind of data – assuming IP law allows them to copy and manipulate it.

1.24 The convergence of technologies is likely to increase the range of context aware, location based services available to and about citizens. In some cases digital content may be transferred from one system to another automatically as people or businesses interact using digital devices. Improvements in machine to machine learning, for example, may create the possibility for further automation in transfer of content. Interactions may therefore become implicitly as well as explicitly monitored and measured. This data will form new and valuable content to be traded within and between systems in the delivery of new services. Data on context and activities transferred to adjacent systems may be repurposed and traded, giving rise to a range of issues relating to copyright.

1.25 These issues are already visible – as the Review goes to press, concerns are being raised by the discovery that the Apple iPhone tracks and stores its location continuously, giving a complete picture of its user’s movements for later retrieval, with legal justification in a short paragraph in a long “terms of use” agreement.²³ Questions of IP, privacy, and security are converging in ways that will, over time, present sharp challenges to the current legal framework.

The Work of the Review

1.26 The full shape and impact of this coming revolution in innovation models is, by definition, unknowable.

1.27 The point is that the UK’s system of IP will be tested by some version of these scenarios and it will need to be ready to adapt. The challenge is to make sure that the IP framework is flexible enough to facilitate, rather than obstruct, the capacity for digital technology to deliver growth. This needs to be accomplished in a way that simultaneously protects, as far as possible, the position of existing communities of rights holders, notably the extraordinary diversity of individuals and firms which make up the UK’s highly successful creative industries.

1.28 Digital technology has already generated enormous turbulence among creative businesses. That is certain to continue, until digital business models establish themselves around a new settlement for the terms and conditions on which digital goods and services are priced in global digital markets. As digital’s full impact extends across the rest of the economy, it is impossible to imagine that the line between IP protection which merits public support and that which does not will remain static.

1.29 The Review has set itself the challenge of identifying 10 recommendations to ensure that UK policy on IP moves in a direction which will enable the necessary adaptation to take place. The explicit goal of all the recommendations in this review is to support dynamic UK businesses, within and beyond the creative sector, which will deliver innovation, growth and jobs in the years to come.

Chapter 2

The Evidence Base

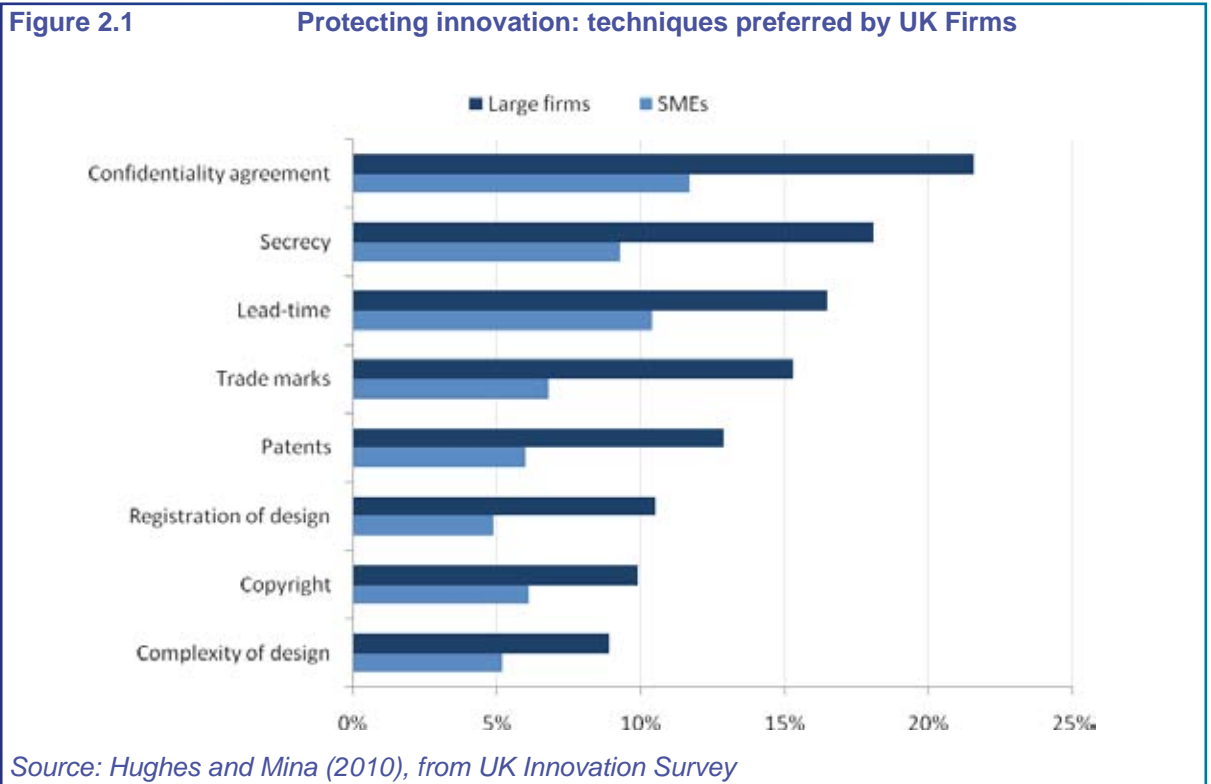
2.1 The Review has committed itself to an evidence-based approach and we start by considering the evidence base currently available to inform policy. We have sought to base our recommendations on our best understanding of where the IP framework currently provides effective incentives to innovate and where the exclusive rights that IPRs confer might result in diminished competition or disincentives to innovate. The evidence available for this task is not complete, but it is improving rapidly.

2.2 We seek to understand how IPRs can fulfil the economic incentive role described in the Statute of Anne, Britain's first copyright legislation, enacted in 1709 and definitively summarised in the US Constitution in 1776: – “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”.

Existing Evidence

2.3 The last 15 years have seen an explosion in work on the economics of IPRs, arising from the growing recognition of the importance of innovation in driving productivity and growth in advanced economies. Most of this work has focused upon incentives to patent¹ or the returns to patents² and trade marks³ at the level of firms and industries. This work is facilitated by the ability to link large sets of micro data on various aspects of firm performance with IP office data on patents and trade marks.⁴ Work has also been commissioned by the EU on the value of patents.⁵ The USA is a rich source of empirical evidence on patent values and litigation, partly driven by the information needs of a venture capital system which looks to defensible IPRs as an important point of valuation.

2.4 Overall, there is substantial evidence on patents as mechanisms to incentivise and reward the exploitation of invention. One caveat is that much innovation – the commercialisation of new products, services and processes – happens without the use of formal IPRs. As shown in Figure 2.1 patents are less frequently used by innovating firms, large as well as small, than speed to market, secrecy or confidentiality agreements.⁶



2.5 Unfortunately, in much economic analysis work, patents are treated as an innovation output measure. This implies that more patents indicates more innovation, which is not necessarily true.

2.6 There is a modest but increasing body of evidence on trade marks, as a means to protect reputation and enable and sustain (though not initiate) innovation. There is significantly less empirical evidence on the economic effects of design rights and next to no evidence on copyright policy.⁷ The lack of economic evidence on copyright may reflect a public debate shaped by a desire to provide creators with a “just reward” rather than by hard economics. This is no longer satisfactory in the light of the growing importance of the creative industries in the UK economy and the spread of copyright’s impact across business sectors outside the creative industries.

2.7 Much of the UK evidence on the impact of patents and trade marks has come from Mark Rogers and Christine Greenhalgh,⁸ whose work confirms that IPRs create incentives by improving returns to innovation, but with differences across industries. They also show that firms, especially SMEs, using patents and trade marks are more likely to survive and grow than those that do not, although the causation is not necessarily established.

IP and Contestable Markets

2.8 Other research on UK and EU markets⁹ shows that technology spreads faster, and has bigger positive effects on productivity, in industries where there is more open competition and so more contestable markets – i.e. markets to which new entrants can gain ready access. This is supported by recent OECD work, showing that in countries where there is more dynamism and contestability in

markets, measured by the presence of more fast growing and shrinking firms, productivity growth is significantly higher. In countries where there are more static firms – neither growing nor shrinking – rates of productivity growth are lower.¹⁰

2.9 A study commissioned for the Review on patenting and the contestability of markets suggests that for the majority of UK industry sectors, and large firms in particular, the incidence of patenting does not appear to impede the contestability of markets.¹¹ So more patenting in these areas of the economy is neither good nor bad for competition.

2.10 The study found that in general for firms less than five years old (micro firms and SMEs – many of which have the potential to be high growth firms) patenting and competition are positively related. This might be a result of improved access to venture capital and other forms of financing. By contrast, for sectors that are information intensive (science based industries and the machinery or instruments sectors), patenting can have a negative effect on contestability. Particularly in high technology sectors we see a big volume of patents but relatively less challenge by small and younger firms.

2.11 This finding may be due to the existence of patent thickets – meaning “an overlapping set of patent rights” which require innovators to reach licensing deals for multiple patents from multiple sources.¹² These thickets appear to enable patent holders to exclude new and innovative firms from entering the market, thereby inhibiting growth. In these high technology and information intensive sectors we need to ensure that the IP system acts as a net incentive to innovation and growth.

2.12 The evidence supports a presumption that policy makers should favour competition and contestability in markets as a necessary condition for innovation, enterprise and growth. The economic evidence on IPRs needs to be considered against this background, viewing these rights as necessary departures from the reliance upon competition, to be judiciously designed to enhance innovation incentives.

Evidence Driven Policy

2.13 There are three main practical obstacles to using evidence on the economic impacts of IP:

- There are areas of IPRs on which data is simply difficult to assemble. While patents are well documented, and traceable to their owners, unregistered design rights and copyright use are not.
- The most controversial policy questions usually arise in areas (such as computer programs, digital communication and biosciences) which are new and inherently uncertain because they involve new technologies or new markets whose characteristics are not well understood or measured.
- Much of the data needed to develop empirical evidence on copyright and designs is privately held. It enters the public domain chiefly in the form of “evidence” supporting the arguments of lobbyists (“lobbynamics”) rather than as independently verified research conclusions.

2.14 Dealing with these obstacles requires an approach to evidence which:

- makes the most of the available research where data can be developed;
- applies the lessons learned in those areas where we do have data to areas where we don't, in ways which make credible use of economic theory;
- demands standards of transparency and openness in both methodology and data.

2.15 It also presupposes an institutional environment which encourages the relevant public authorities to build, present and act upon the evidence. This cannot be achieved if relevant institutions of Government lack access to the data upon which corporate lobbying and other positions are constructed. We return to this point later in the Review.

2.16 The Review has found that IP policy has not always been developed in a way consistent with the economic evidence. We give two examples below.

The EU Database Directive

An EU Directive to harmonise and increase protection for databases was adopted in 1996. Its aims were to a) harmonise laws between Member States to aid the functioning of the single market and b) increase protection for databases in those Member States where they were “not sufficiently protected”. The hope was that by introducing such protection throughout the EU, database producers would be incentivised to invest in databases and information processing systems, and thereby reduce the “very great imbalance” in the level of investment in the database sector between the EU and third countries – notably the US, which has no such right. The aim was to ensure the EU got a foothold in this growing sector at an early stage. The European Commission carried out an evaluation of the Directive in 2006.¹³ This found that EU database creation had declined since introduction of the Directive, whilst it had continued to rise in the US, undermining the rationale for the right in the first place. The EU Database Directive remains unchanged.

Copyright Term Extension

Economic evidence is clear that the likely deadweight loss to the economy exceeds any additional incentivising effect which might result from the extension of copyright term beyond its present levels.¹⁴ This is doubly clear for retrospective extension to copyright term, given the impossibility of incentivising the creation of already existing works, or work from artists already dead.

Despite this, there are frequent proposals to increase term, such as the current proposal to extend protection for sound recordings in Europe from 50 to 70 or even 95 years. The UK Government assessment found it to be economically detrimental.¹⁵ An international study found term extension to have no impact on output.¹⁶

2.17 Economic evidence is not, of course, the sole driver of IP policy. Legitimate questions of culture, fairness and “just reward” for creators also arise, and have tended to dominate the debate on copyright issues. Indeed, they were explicitly cited by the previous Government as justification for

extension of copyright term, despite the economic evidence. These questions are clearly significant, and it is not part of the Review's task to determine how they should be resolved. We simply invite Government to consider that as copyright becomes increasingly economically important, it is vital that economic considerations are fully weighed in the balance. This is especially so given the role, noted in the previous chapter, that copyright is acquiring of regulating the permissibility of technologies, such as consumer recording devices and web search engines. If the current imbalance in the debate on copyright is allowed to continue, the economic price will be high.

2.18 Patents have not as yet faced the same form of transformational challenge as copyright. Nonetheless, we have still found a tendency for preconception rather than evidence to drive some aspects of patent policy. In Chapter 6, we consider the question of patenting non-technical computer programs and business methods, and find that some IP institutions (although not, to its credit, those for which the UK Government is responsible) have sought to extend the reach of patents without firm economic evidence.

2.19 In the years ahead technological and societal changes will present further challenges to the IPR system, as the relative and absolute share of economic activity based on creating and using IP continues to rise. Technology will continue to develop in ways that destroy the boundaries of existing markets. This in itself will create new uncertainties, and new interfaces between IP and competition policy. At the same time, the boundaries between legal spheres, such as IP and privacy law, are starting to dissolve. It is reasonable to suppose that in this atmosphere, with governments around the world eager to promote economic growth and the creation of quality jobs, there will be forceful demands for new IP interventions, in terms of both scope and intensity of enforcement. In such an environment it is vital that policy is firmly rooted in evidence.

2.20 A theme from the responses to the Review's *Call for Evidence* is a need for stability in the system. Economic actors need to be able to have confidence in the predictability of the regulatory environment. For example, Microsoft argues that "the IP system as it stands is a basis for legal certainty and trust, under which the market can and does act efficiently because the rules are stable and well-understood."

2.21 This is a valid observation. But at the same time, the IP framework should not seek to insulate creators or users of IPRs from market or technology outcomes which are beneficial to contestability, enterprise, innovation and growth. "Stability" should not mean maintaining the income streams of incumbent firms at the expense of new entrants or disruptive technologies, where these provide better outcomes for consumers and more prosperity for the nation as a whole.

Recommendation: Evidence.

Government should ensure that development of the IP System is driven as far as possible by objective evidence. Policy should balance measurable economic objectives against social goals and potential benefits for rights holders against impacts on consumers and other interests. These concerns will be of particular importance in assessing future claims to extend rights or in determining desirable limits to rights.

Chapter 3

The International Context

3.1 Getting the IP framework in the best possible shape to support innovation and growth in the UK requires strong and consistent action at the international level. This is because the network of international IP treaties limits the ability of individual countries to go their own way. A sound international IP framework also helps the UK's many IP intensive companies succeed in export markets. An open, intangibles-intensive economy like the UK's has most to gain from healthy growth in these global markets. In 2009, the UK's IPR reliant business sectors exported over £113 billion of goods and services.¹

3.2 This means that an initiative like the international Patent Cooperation Treaty (PCT), which provides a means of making a single patent application which can then progress into patents in up to 142 different contracting states, could be of exceptionally high value for the UK. Conversely, differences between IP regimes, including multiple and overlapping dispute resolution mechanisms, can act as a brake on trade in products protected by IPRs because of the costs and complexities they impose. This especially disadvantages SMEs, which are least equipped to deal with them.²

3.3 It is also of great importance that UK firms are able to enforce their IPRs in overseas markets, especially rapidly growing areas such as India and China. IP enforcement in China has presented difficulties for many years, but as China's economy becomes more knowledge intensive, these dynamics will shift. China announced earlier this year that it plans to double the number of its international patent applications by 2015.³

Influence through Evidence

3.4 The principle that policy should be shaped according to evidence applies as much to international as domestic frameworks. The UK can only strengthen its position in international policy negotiations by making consistent arguments based on evidence.

3.5 There is much to build upon. From the internationally praised Commission on Intellectual Property Rights and Development in 2002,⁴ through the evidence based approach of the Gowers Review in 2006, to the current IPO focus on linking IP policy to broader economic concerns, the UK has exerted influence. This influence has, however, to some degree been undermined by an absence of strategic consistency. An example is the failure to follow through on key recommendations of the Gowers review, initially welcomed by Ministers but then contradicted by UK positions in international negotiation.

3.6 If the UK is to persuade others of the value of the economic focus this review has espoused, it will need to demonstrate this in actions as well as words. Economic considerations dictate the order of priorities set out in the remainder of this section of the Review.

The European Framework

3.7 Most of the economic problems and opportunities facing the UK with regard to IP are shared by other members of the European Union (EU). Rapid change in digital technologies affects everyone, as does the requirement for advanced economies to increase their capacity to innovate. It is no coincidence that we find ourselves in a crucial period for IP issues at the European level.

3.8 The European Commission's "Digital Agenda for Europe" highlighted the need to simplify copyright licensing across the EU – an issue we consider in Chapter 4.⁵ As this review was drawing to a close, the Commission was expected to issue a communication proposing the future direction of IP strategy. The Government should develop its position with regard to this communication based on the recommendations in this review.

Harmonisation of Rights

3.9 It is commonplace to note the large benefits enjoyed by UK firms from unrestricted access to the single EU market. There is plenty of evidence that the size of the US home market represents a distinct advantage in terms of stimulating innovation.⁶ IP harmonisation in Europe is therefore a high priority.

3.10 The beneficial effects of the single market can be observed in trade marks and designs. Trade marks and design right are largely harmonised at EU level, and include both rights which cover the whole EU, administered by the Office for Harmonisation in the Internal Market (OHIM), along with harmonised national rights in each country. This makes it easier to market programmes for new products across Europe, as a result of which firms build and sustain strong brand positions, supported by innovation. UK marketing services exports more than doubled from £1.15bn in 1999 to £2.43bn in 2009.⁷

3.11 Harmonisation has progressed less well in relationship to other rights. Copyright is partly harmonised, but in a piecemeal manner, principally regarding copyright term, copyright for computer programs, and allowable copyright exceptions (see Chapter 5). However, the most pressing EU issue is the single EU patent court and EU patent.

The EU Patent

3.12 Patents are not harmonised at EU level, but the conditions for granting patents, and hence validity, are harmonised across Europe, including the EU and additional states, through the European Patent Convention (EPC). Under this patent rights are granted by the European Patent Office (EPO) and by national patent offices.

3.13 Once granted by the EPO a European Patent becomes a “bundle” of national patents, each subject to the laws of the individual countries and which must be litigated separately in each. A single patent covering Europe has been an ambition for over 40 years, but negotiations have always foundered on language or technical issues. The most recent obstacle placed in its path is that the Court of Justice of the European Communities has ruled that the current proposal for a single patent court is not compatible with the Treaty on European Union.

3.14 This lack of a single unified patent system creates self evident problems for innovative firms attempting to operate in the European market compared with the unified markets of the US, India and China.⁸ It causes wasteful duplication in terms of litigation in each jurisdiction – projected private annual savings on duplicated litigation alone are estimated at between €120 million and €240 million.⁹ Furthermore, it increases the cost of cross border commerce. Removal of inter EU country barriers in IP could increase UK national income by over £2billion a year by 2020.¹⁰

3.15 The absence of a European patent court was seen by most submissions to the Review on this topic as the key difficulty. Although the EPO and national courts seek to avoid divergence in their decisions, there are some areas (notably computer programs as discussed in Chapter 6) where discrepancies arise. Additionally, in the absence of such a court, the need for separate litigation in each jurisdiction still remains.

3.16 The creation of a unitary EU patent was generally seen by respondents to the Review as a second order problem, with concerns that any system should offer cost and efficiency advantages. These are important concerns – a system which is slow, or produces low quality patents or court decisions could have a significant economic downside.¹¹ One particular side effect might be a further increase in density of patent thickets if application and maintenance costs are low – this issue is considered in Chapter 6. Other concerns relate to the precise configuration of a unified European patent system.

3.17 There is a real danger that in this long and unresolved negotiation, the best has become the enemy of the good. The burdens arising from the absence of a unitary patent and court fall most heavily on SMEs. In the competition to attract and nurture innovative high technology start ups the disadvantage of Europe (38 patent regimes) compared to the US, China and India (one) is obvious.

The Global Framework

3.18 Beyond the EU there are two key global fora which specialise in IP: the World Intellectual Property Organisation (WIPO) and the Trade Related aspects of Intellectual Property rights (TRIPs) Council, which is part of the World Trade Organisation (WTO).

3.19 WIPO is the United Nations (UN) agency which administers most of the global IP treaties. In recent years, divisions between the developed and developing world have led to a general stalling of discussions on a range of issues. However, the current Director General, Francis Gurry, has shown a strong commitment to reforming the organisation, focusing it upon economic issues and improving its effectiveness since his appointment in 2008.

3.20 The TRIPs Agreement is one of the agreements underlying the WTO, and ties a number of the key provisions of international treaties into the WTO dispute resolution system, meaning that violation of those provisions can lead to trade sanctions within the WTO framework. Development issues have come to the fore in recent years, particularly at the beginning of the Doha trade round, when access to medicines for developing countries was a key issue in the trade talks.

3.21 With the basic structure of rights generally established by international treaties and in particular the TRIPs Agreement, attention in international negotiations – particularly Free Trade Agreements (FTAs) and most recently the Anti Counterfeiting Trade Agreement (ACTA) – has focused on effective enforcement of rights.

3.22 It is apparent from the sometimes heated nature of discussions in WIPO and the WTO that developing countries often feel the developed world is seeking to impose an approach to IP which serves the interest of advanced economies upon countries whose economies are at an earlier stage of development. The evidence based approach advocated in this review offers a better basis upon which to seek routes through these complex questions and conflicts of interest.

3.23 The evidence suggests that developed economies such as the UK's benefit from effective IPR regimes, and in particular from effective enforcement regimes, in markets for their goods. It also appears to be the case that for low income countries with a weak scientific and technological infrastructure, stronger IP protection has little effect on their own economic growth and may even hinder it – while having no significant effect on the likelihood of developed country industry seeking to sell goods there. Access to infrastructure, finance and skills can be much more important to investment decisions in low income countries than the effectiveness of the IP regime. By contrast, for middle income and emerging economies such as China, improved enforcement regimes may yield better rewards both for domestic innovation and returns to foreign firms through foreign direct investment and technical cooperation.¹²

3.24 The UK recently¹³ announced that it would be appointing IP attachés in a number of countries including China and India, reflecting the importance to the UK of sound IP frameworks in these countries, as well as in assisting IP intensive UK firms to exploit new markets. Deployment of evidence-based positions in global negotiations can move parties further from entrenched positions, towards an overriding objective of developing a mutually beneficial world trade in intangibles. This represents a high strategic priority for the United Kingdom.

The Patent Cooperation Treaty

3.25 One area where the international patent system is not functioning well enough is the operation of the Patent Cooperation Treaty system. This system, administered by WIPO, provides a single point of entry to the patent systems of 142 contracting states via a single application. Applications are sent to one of a number of patent offices which have been designated as “International Search Authorities” for a search to determine if the invention claimed is novel or inventive. The results of the search are then sent, along with the application, to the individual office of the country the applicant wants protection in, for grant or refusal.

3.26 In theory, this system offers a highly efficient way of processing patent applications; in particular, by providing a way of only requiring one search worldwide. Unfortunately, as documented by WIPO,¹⁴ national offices have proved reluctant to commit themselves to relying on the international searches, on the grounds that they doubt the quality of the examinations meets their own standards.

3.27 Given the strain on patent offices from increasing numbers of patent applications internationally, considered in more detail in Chapter 6, this is a problem urgently in need of a solution. The UK should therefore make it a priority to support the work of WIPO to improve trust in a system of international search. This would be in addition to the other work sharing initiatives among patent offices considered in Chapter 6.

Conclusion

3.28 The challenges from changing technology and patterns of innovation extend well beyond the UK. By adopting the evidence-based approach advocated by the Review, the UK has the chance to help shape global responses to these challenges, and so position itself to take best advantage of the opportunities they offer internationally.

Recommendation: International priorities.

The UK should resolutely pursue its international interests in IP, particularly with respect to emerging economies such as China and India, based upon positions grounded in economic evidence. It should attach the highest immediate priority to achieving a unified EU patent court and EU patent system, which promises significant economic benefits to UK business. The UK should work to make the Patent Cooperation Treaty a more effective vehicle for international processing of patent applications.

Chapter 4

Copyright Licensing: a Moment of Opportunity

4.1 In developing the UK's IP framework to maximise economic growth and innovation, copyright presents our biggest challenge, but also our biggest opportunity. It came as no surprise that copyright was the subject of most responses to the Review's *Call for Evidence*.

4.2 It is now clear to everyone that digital technology is transforming copyright, for better and for worse. Infringement is widespread; understanding of the law is poor; millions of works cannot be digitised for conservation or accessed at all and content industry business models are under strain, prompting companies to look to Government for vigorous enforcement action against consumers and suppliers of "pirate" content.

4.3 In the last two decades, it has sometimes appeared that the very idea of copyright as a protected source of income to creators is under threat, swept away in a philosophical tide which proclaims a world wide web which is open, unmanaged and essentially the domain of free speech and "free" goods. More recently, this narrative has been tempered as some of the world's biggest companies, such as Microsoft, Apple, Google and Facebook, have successfully deployed business models which depend upon managing the internet. At the time of writing, Apple is the most highly valued technology company in global stock markets and Facebook is establishing itself as a primary marketing medium for consumer facing companies. The further evolution of the internet will depend on the ongoing interchange between the actions of large companies and those of individual users.¹

4.4 In the UK, substantial corporate players like BT, BSkyB, Vodafone and TalkTalk have crossed the boundaries which used to separate operators of telecommunications networks and suppliers of content. Hundreds of smaller UK businesses are successful designers of applications for smart phones made by the likes of Apple, Google, Samsung, Sony and Nokia. Digital has brought huge benefits to publishers like Pearson and Reed Elsevier. A case study commissioned by the Review on the video on demand market found competition and innovation thriving.² A recent report on the audio visual industries also cites the high levels of innovation and economic value in that sector.³

4.5 Digital technology is thus enabling UK businesses to serve UK and global markets better, using innovation to raise productivity and exploit new outlets.

“Numerous on-demand services have already launched in the UK, and the UK’s non-linear market is expected to demonstrate strong growth, potentially reaching a tipping point as broadband services become increasingly available through televisions. We expect this to lead to increased competition, choice for consumers, and a downward pressure on prices.” *PACT (Producers Alliance for Cinema and Television) submission*

“The relationship between creativity and technology is and always has been symbiotic...Technology devices and information networks cannot exist without content; and much of this will be of artistic and cultural excellence. Search engines and video websites would be far less successful were it not for the fact that users are seeking out high quality, professional content (as well as the user generated, amateur works).” *Publishers Association submission*

“News Corporation, and the content industries in general, are driving much of the innovation online in the transition to new digital business models which broaden the scope of the legitimate market, offering consumers greater ease of access and more choice whilst asserting and protecting the value of what we have created.” *News Corporation Submission*

4.6 In this context, successive UK Governments have nurtured the creative industries, with good reason. The UK has the largest national creative sector in Europe. It invests over £20bn every year in creating intangible assets protected by copyright.⁴ Creative industries, according to Government figures, account for 5.6 per cent of UK gross value added. The Government’s recent *Plan for Growth* noted that the exports of the digital creative industries are third only to those of advanced engineering and financial and professional services.⁵

4.7 Digital technology also enables citizens to arrange consumption of digital content around their own preferences. Many have become creators and publishers (by posting their own music, video and photos online), or reusers (by making “mash ups” and other derivative works). Today, students arrive at UK university film courses already proficient in the video editing skills which ten years ago dominated their learning programmes. These changes open up channels for the development of new services from micro businesses and SMEs, which are potent forces for job creation, not only in world class creative industry centres like London, but also in many UK regional locations. The success of the Scottish video games sector is an important example of the latter.

4.8 The Review agrees with the *Plan for Growth* when it says that creative industries “rely on a strong Intellectual Property (IP) regime” but also when it adds: “the interests of IP holders need to be balanced against those of potential innovators, protecting incentives to invest in content, without damaging innovation and opportunities for new entrants.”⁶ Copyright seeks to achieve this by giving creators temporary exclusive rights (life plus 70 years for most works) to their original creations, enabling them to exploit them economically or to license them to others.

4.9 Economists regard copyright as a trade off between the positive effects of the incentives provided to creators and commercialisers of content.⁷ The negative effects of establishing monopoly rights for those parties, which have the potential to restrict supply and to inflate transaction costs.

4.10 In practice, most content rights are acquired and exploited by intermediaries – publishers or recording companies – and most individual rights holders are rewarded through intermediaries. The UK system operates chiefly through a combination of individually rewarded rights, and a network of collective rights, where users pay to access broad collections of copyright material, administered by collecting societies on behalf of the owners of individual parts of the collection.

4.11 Furthermore, copyright is increasingly important to business sectors outside of the creative industries. The exploitation of digital in order to create new and more efficient services generally relies on transmission, display and analysis of data through copying, which digital technology makes possible almost instantly and on a global scale. The challenge is to respond to the turbulence which this technology has caused for copyright in a way that facilitates the emergence of new businesses, without undermining the basic model of copyright, which has sustained creative businesses for more than three centuries.

4.12 We deal more fully with emerging sectors of the digital economy in Chapter 5 and with enforcement issues in Chapter 8. In this chapter we examine how best to ensure that UK digital markets for copyright works are transparent, contestable and supportive to innovation, so that transaction costs are minimised and investment signals clarified. The goal is a functioning online licensing market to support delivery of legitimate content to consumers in attractive and competing offerings, through the many available channels (old and new). Realising these opportunities will offer rewards within the UK market, but will also over time support the sale of UK content and services in international markets.

Copyright Licensing

4.13 The economic importance of the UK's copyright intensive industries makes efficient markets for copyright licensing strategically important to the UK's growth prospects. We need the system, and in particular the mechanics of clearing rights, to adapt to serve the market opportunities which digital speeds and volumes make possible. Our recommendations address a range of issues designed to improve licensing procedures.

A Digital Copyright Exchange

4.14 Different sectors have been differently affected by digital. Newspapers have struggled to combine physical and online business models, but there are signs that some are starting to emerge from the worst of this turbulence. Music initially saw lower distribution costs when CDs took market share from vinyl, but the industry then faced a threatened collapse of value, as unauthorised distribution at near zero cost became available through the internet. Publishing faces new challenges as sales of ebooks have overtaken paperback books in the US market.⁸ Gatherings of publishers worry about the growth of piracy.⁹ The popularity of tablets like the iPad has created new markets for magazines, but also at the price of higher piracy levels, as reported to the Review by magazine publishers. Television, film and video games have suffered less disruption to date only because broadband speeds and earlier generations of mobile phones were not hospitable to large video files, but this too is rapidly changing, as the internet matures as an audio visual network.

4.15 These changes bring ever more complex ways of using, aggregating and distributing content, with attendant increases in complexity of licensing. The sectors affected have responded. The UK has over 70¹⁰ licensed digital music services - more than the US. But this has so far failed to establish a sufficiently robust UK market in online music sales to satisfy consumers and so push back the incursion of free services based on copyright infringement.

4.16 There is no simple answer. Recorded music companies seek to establish price levels for digital music tracks that are acceptable to consumers, while also seeking to meet existing (if shrinking) demand for physical formats like CDs. Creators, service providers and consumers all find it difficult to assess the relative values of radio, internet streaming and on demand services. One element in the solution may be new mechanisms of enforcement to curb illicit competition; as envisaged in the Digital Economy Act (DEA). Another is to make sure that there is a healthy, contestable market in buying and selling rights, so that companies wishing to sell music content and services to consumers can compete to license rights in the most efficient and attractive way possible.

4.17 Examples of inefficiency in copyright licensing are not difficult to find. The BBC has said that it took nearly five years to assemble the rights necessary to launch its popular iPlayer service. Among a group of young technology SMEs the Review met at a meeting at TechHub, half claimed to have had difficulty licensing others' IP across all rights. One SME, providing on demand streaming of radio shows and DJ mixes, reported it took about nine months of lobbying music collecting societies to make any headway on licensing. Others said that licensing discussions are inconsistent, with some users offered access to licences and others denied without clear explanation. Some were met with threats of legal action rather than a business discussion about terms. Others reported that it was simply impossible to get the information needed on what terms might be available, since there was no precise clarity about who should be contacted and how to discuss licensing needs.¹¹

4.18 In discussing these issues with those responsible for selling licences, a routine response is that many SMEs are not willing or able to pay prices acceptable to the licensors and/or that their new business models are not viable. These are the judgments that licensors in a free market are entitled to make. But they also indicate the difficulties which arise when a market fails to deliver clear signals about price and other terms of trade as a matter of routine.

4.19 Furthermore, many individual creators and designers, face these challenges from the other side in marketing their works. They would like to operate in a more accessible licensing environment.

“Clearing rights is a cumbersome and costly exercise, and it can be difficult to know who owns the rights to a given piece of content in the first place. Those problems are exacerbated for new entrants who want to aggregate content from multiple sources, possibly curating it in novel ways or layering value-added services on top of it.” *Pearson submission*

“Obtaining permission from rights-holders can be a costly and onerous process for example, limiting the degree to which protected work can be legally used for innovative new purposes.” *CBI submission*

4.20 It is widely acknowledged that the solution to these difficulties lies in the very technologies that created the problem. Just as digital technologies provide new and exciting ways of using content, they offer a means of transforming the efficiency of licensing. As the submission from the European Publishers Council states: “the answer to the machine is in the machine”.

“The vision for users is that rights licensing becomes a one-click process, with the communication of permissions and licensing terms taking place automatically. As with the Domain Name System, in which a series of machine-to-machine interactions connects a user to a webpage in a matter of a second or less, much or all of the complexity can be hidden from the users. This would have a real and meaningful impact on how content is managed online.” *News Corporation submission*

“Automated Licensing is the Future.” *Reed Elsevier submission*

“As in every other part of our lives, we need to move away from the traditional people-intensive mechanisms that have characterised the management of copyright and embrace machine-to-machine management of rights and permissions.” *European Publishers Council submission*

“Remove friction and uncertainty from the licensing process by enabling creators, rights holders and their representatives directly to conclude equitable licensing transactions with users in a quick and simple way.” *Stop 43 submission*

4.21 Although many of these proponents of modernised licensing are large firms or representative bodies it is SMEs who have most to gain from more accessible, transparent markets for rights. Much evidence to the Review reminded us that there are large numbers of small enterprises working within the copyright intensive industries, from individual photographers and writers to technology start ups. We have noted elsewhere in the Review the strategic importance of young innovative firms to growth. When excessive transaction costs arise in digital markets, all players lose, but – because SMEs are least equipped to cope with transaction costs and complexities – they lose more than most.¹² For the same reason they suffer most from the absence of automatic licensing facilities configured to make legitimate use of their own copyright works.

4.22 How could the UK achieve the fast, reliable and secure licensing exchange that so many businesses say they would welcome? How can we ensure that it contains all the necessary features so that digital content markets become satisfactorily contestable; provides clearer signals to potential investors and connects to emerging digital licensing systems in other countries?

4.23 The key benefits of such an exchange would be:

For creators:

- improved routes to market;
- a means to record unmistakably the ownership of rights, and the terms on which they are available;
- clearer understanding of licensing terms and conditions throughout the market and so more realistic judgments about their own business models;
- increased options to license an individual creator's works directly;
- a defence against rogue "orphaning" of works, through digital fingerprinting (see orphan works section below);
- a single point of access to UK collecting societies and eventually to competitor societies in other territories.

For intermediary rights holders:

- automated licensing via standard terms if offered by the rights holder;
- ready identification of rights holder's negotiating agent to facilitate licensing;
- decreased risk of infringements by providing clarity as to what is licensed and what is not via terms checkable at the click of a mouse;
- a more level playing field for new market entrants and incumbents;
- a better informed market.

For consumers and other rights users:

- a place where those seeking to use copyright works can quickly identify the rights holder and secure a licence, either through automation or via a negotiating agent;
- more choice, better services and lower prices for consumers from a more open and contestable market further up the supply chain.

For all:

- increased transparency in the marketplace as to relative price (though normal business assumptions would apply to non-disclosure of commercially sensitive terms);
- facilitation of audit by users and any regulatory authority;
- reduced transaction costs;
- first port of call/first tier of education and information for newcomers to copyright issues;
- low cost resolution of disputes.

4.24 These are notable benefits, but setting them out still does not answer the question why such a system has not already been created, since this review is not the first place in which this idea has been explored. WIPO Director General, Francis Gurry, recently said: "I believe that an international music registry -- a global repertoire database -- would be a very valuable and needed step in the direction of establishing the infrastructure for global licensing."¹³ WIPO is currently supporting the development of a digital copyright licensing system among a group of African countries, which currently lack access to any reliable marketplace in copyright content.

4.25 As technology has advanced, a number of other sector based or geography based initiatives have been launched. We are aware of at least half a dozen examples.ⁱⁱ However, these initiatives are disparate, some appear to have lost momentum, and they have not so far produced the common standards and principles which would realise the potential of digital licensing.

4.26 It is also very likely that some version of this idea will eventually establish itself. The question is not if, but when. At this juncture, the UK Government still has a choice whether to take a lead and bring about such arrangements by encouraging the relevant players to come together, within an agreed framework of rules, or simply to wait for a sufficiently strong market player or series of players to impose their own rules.

4.27 This choice has been vividly evident during the Review in the shape of the Google Books debate. This deal, negotiated in great detail by Google and parts of the US publishing industry, would have turned Google's¹⁴ unlicensed approach to the mass digitisation of the world's books into what is, in effect, an online licensing system, complete with stakeholder governance and disputes procedures. However, in March 2011, a US judge rejected it, referring to concerns about the advantageous position the settlement would give Google.¹⁵

4.28 During the Review, conversations about the Google Books Agreement tended to divide people between those who see Google as the likeliest and most efficient reshaper of global markets in digital content, because its business model relies upon connecting online consumers with digital content in all media; and those who point with concern to Google's already very considerable market power, profiting from delivering access to other companies' content, whether provided by legitimate services or not. Google's size and reach in global digital markets has already provoked the attention of EU competition authorities. Google itself may be at a point of recognition that its size requires it to proceed at least to some extent by negotiation and agreement rather than only by bold entrepreneurial strikes which leave courts, regulators and governments gasping to catch up.

4.29 The Review's judgment is that the Government has a severely time limited opportunity to bring about in the UK the best copyright licensing system in the world. To achieve this will require firm, even inspirational leadership, given the high commercial stakes for a large number of competing firms. The prize is to build on the UK's current competitive advantage in creative content to become a leader in licensing services for global content markets; in short to make the UK the best place in the world to do business in digital content. It is not fanciful to suggest that such a development would be of comparable importance over time to the UK's position as the leading service support centre in the European time zone in financial services.

4.30 It is important to be clear that we are not advocating that Government should itself create this Digital Copyright Exchange. That way lies a nightmare of IT procurement followed by the birth of a white elephant. The task for Government is to use its convening power, to show leadership to achieve an outcome which others have not been able to manage. It will involve bringing together all relevant interests, and finding ways to overcome divergences of interest to secure the bigger prize in a way that takes account of the interests of all. More than a nudge, perhaps, but less than a full arm lock with menaces.

ii Accessible Registries of Rights Information and Orphan Works (Arrow), Automated Content Access Protocol (ACAP), Global Repertoire Database, Picture Licensing Universal System (Useplus), the ONIX standards for Books, Serials and Licensing Terms, OnLineArt (OLA)

Building the Digital Copyright Exchange

4.31 The aim is to establish a network of interoperable databases to provide a common platform for licensing transactions. By developing an open, standardised approach to data it will be possible to:

- attach copyright conditions and rights information directly to digital content in a uniform machine readable fashion (so called meta data);
- license across delivery technologies, to facilitate open competition between services based on different technologies;
- adapt to emerging technologies;
- meet the specific needs of different sectors while remaining governed by common standards and principles;
- bring in licensing for other rights, such as design right (which the Review considers in Chapter 7).

4.32 Further reductions of transaction costs can be achieved by ensuring that disputes regarding use of works within the system are routed to a low cost dispute resolution system.

4.33 Much of the experience and technical expertise required for such a digital copyright exchange already exists in current initiatives and registries, including those referred to above. Content creators, publishers and rights management organisations also have their own internal systems. Some have compared the task to the successful management of domain names on the internet. The initiative should draw on and build on experience of these systems as it creates a standardised approach. The Government should also draw in the expertise of internet service providers (ISPs) and other internet technology companies to help design and build the service.

4.34 But mere Government goodwill and blandishments will not suffice alone to bring the exchange into existence. Participation should be genuinely voluntary but the Government should also ensure that participation in the Digital Copyright Exchange confers clear benefits and that there are costs of voluntary exclusion. Incentives the Government should explore include:

- providing that remedies, for example damages, are greater for infringement of rights to works available through the licensing exchange than for other works;
- making DEA sanctions apply only to infringements involving works available through the exchange;
- requiring that an orphan works search requires checking of the licensing exchange as part of a diligent search (see the orphan works discussion below);
- giving creators the right to withdraw from future publisher/record companies contracts where the latter are not marketing a creator's works through the exchange;
- putting publicly owned copyright material on the Copyright Exchange at day one and exerting its influence on other public bodies to do likewise;
- providing funding for the costs of establishing the exchange (including development of IT) – possibly from IPO reserves;ⁱⁱⁱ

ⁱⁱⁱ The IPO's reserves stood at £55m at the end of March 2010.

- working with Internet search providers to ensure that sites that are part of the exchange are flagged and highlighted to enable users readily to find them before they encounter less legitimate sites.

4.35 In order to achieve the necessary momentum to create the Digital Copyright Exchange, a highly respected figure will be needed to lead its formative stage. The goal should be to establish these new arrangements by the end of 2012.

4.36 With these incentives and a clear time bound process, together with the benefits outlined above, a point will quickly be reached when the exchange becomes self propelling as the growing numbers of available rights available increases the value of the exchange, leading to still more rights holders joining. It would be relatively straightforward to fund the exchange's running costs through a small user charge. This, for Government, is what success would look like.

4.37 A successful UK Digital Copyright Exchange, once established, would need light regulatory supervision, based upon a code of practice agreed at the outset. In Chapter 10 we make recommendations intended to equip the IPO better to adapt the IP framework to future developments. The IPO might take responsibility for oversight of the new Digital Copyright Exchange, as part of its responsibility for copyright policy. An alternative would be to look to Ofcom which already has experience and expertise in issuing and overseeing national and international licensing processes, along with experience and responsibilities in online enforcement. Ofcom also has Competition Act powers, which would enable it to act as an effective first tier watchdog of competition issues in the growing UK digital rights market.

4.38 It should be added that several submissions to the *Call for Evidence* and other representations by stakeholders identified particular difficulties with transaction processes for licensing music, whether for digital distribution or for alternative uses such as in computer games. Respondents who identified problems include artists, new players in service provision and established international companies. Their complaints include: fragmentation of rights among a multiplicity of rights holders, costs of negotiation, lack of transparency, high up front charges for access to catalogues, marooning of an artist's work where the publisher chooses to withhold it from the market, and non-disclosure agreements which prevent artists having transparent access to the terms on which they are paid for new services.

"Mobile now accounts for about 16% of digital music revenues. We have very direct experience, therefore, of how difficult, cumbersome, time-consuming and costly it is to create these new services. Alternative business models based on attractive legitimate services are absolutely necessary in changing customer behaviour. However we are concerned that market structure may be an inhibitor to achieving change. The music sector in particular is very concentrated." *Mobile Broadband Group submission*

4.39 The particular issues identified in the music industry may be in part the result of this being the first creative sector to be affected by large scale piracy, and therefore grappling with the new reality unaided by the example of others. Their existence suggests the music industry has even more than others to gain from embracing the Digital Copyright Exchange.

A Single EU Market for Content: Cross Border Licensing

4.40 Twenty four years after the inauguration of the EU single market, it is surprising that a firm wishing to source or supply copyright content via a single channel across Europe is unable to do so.¹⁶ Licensing frameworks to achieve such transactions exist, but they make it far more difficult than they should. It is still not possible for a service provider to get a single licence from a collecting society to exercise a right to repertoire in more than one country.

4.41 For firms looking to operate internationally this imposes disproportionate transaction costs, because they need local representatives and must negotiate the many rights systems in other countries, sometimes needing multiple licences from different societies. Where a service aims to launch across the EU, rights holders can also “hold out” if they know they are the last party to sign the agreement, and extract additional rents. Such costs can be excessive, and may lead to less than pan EU coverage, diminishing the market and even jeopardising the service. SMEs in particular would benefit from any reduction in transaction costs. The problem is reported to be acute in music licensing¹⁷ but is not confined to music. Solving this problem offers particular opportunities to the UK because of our strength in the creative industries.

“The potential to increase revenue from use of British music abroad is very strong but is dependent on Government support for a favourable environment for licensing and sub-publishing overseas.” *UK Music submission*

“A Digital Single Market embracing a pan-European licensing framework based on market principles is critical to the success and growth of the EU digital music market.” *Nokia submission*

“... cross-border licensing would overturn the historical model which has traditionally forced creators and commercial users to deal separately with the national collecting societies of each territory in which they seek rights. This obliges content providers to segment their services based on national boundaries – increasingly an inefficient and burdensome way to deliver content over the internet, which is, by its very nature a global phenomenon.” *RadioCentre submission*

4.42 A flexible framework for cross border licensing would lift barriers to the development of new products and services across these markets, and would ultimately enable a UK Digital Copyright Exchange to cover licensing across the EU. It would provide users and rights holders with a choice of “one stop shops” for licences, which would guarantee all rights necessary for providing a service, regardless of label or affiliation. Collecting societies would compete, as they do not need to currently, on overheads, efficiency and service delivery, with potential benefits for rights holders, service providers and consumers. Collecting societies could be required to publish clear, comparable tariffs for rights, enabling rights owners and users to choose which society to deal with based on the terms available.

4.43 Legal changes are needed at EU level to establish cross border licensing, and there is appetite for this among the UK's EU partners. The design of a new EU framework will need to take account of the needs of particular sectors, including territoriality of pricing. Licences with a national scope should remain available alongside cross border licences. An effective mechanism will also be needed for resolving disputes between parties in the markets.

Collecting Societies: Standards and Transparency

4.44 Collecting societies fulfil a valuable role in licensing markets, reducing transaction costs by enabling “many to many” licensing. But they can also harm competition because they are in effect natural monopolies. Collecting societies manage what is in some respects (to licensees at least) a regulatory cost, for instance by charging educational institutions to cover acts of copying of works, or by charging workplaces, bars and restaurants for playing music. Licensees do not generally enjoy the protections that are available to consumers when dealing with broadly comparable organisations, for instance utility companies.

4.45 Copyright licensing processes should provide clarity from creator to consumer, underlining the availability of incentives which are the economic rationale for copyright. In many areas collecting societies are responsible for how well that standard is maintained. Members of collecting societies need to have confidence that their interests are managed effectively, responsibly and transparently.

4.46 Potentially harmful effects of these situations will be mitigated if collecting societies are required to operate transparently and to common standards. The Review notes that some collecting societies are developing or have embraced codes of practice, and the British Copyright Council has put forward a set of principles for such codes. Consumer Focus has also suggested principles which these codes should incorporate.

4.47 Furthermore, if a legal mechanism for Extended Collective Licensing (such as we propose below) is created, it will enable some collecting societies to increase their activity in some markets and to act for rights holders who have not given them specific authorisation. This makes it all the more essential that they observe agreed standards of practice and transparency.

“Protect innovation and creativity by developing independent and light-touch regulation of collecting societies which ensures a level playing-field between existing and new entrants to the marketplace. Whilst ensuring transparency, accountability and protection for individual rights holders, this will also reassure business customers and offer them legal certainty and assurance of a well-regulated sector.”
Design and Artists Copyright Society (DACS) submission

“It would be beneficial to copyright users as a whole for the licensing schemes to be subject to more stringent controls and regulation. Options for achieving this would be to set up a body to review and oversee licensing practices in the UK or to expand the powers of and accessibility to the Copyright Tribunal, for example by permitting representative actions or by giving it pro-active investigatory powers.” *Pinsent Mason report for BECTA*

Recommendation: Copyright licensing.

- *In order to boost UK firms' access to transparent, contestable and global digital markets, the UK should establish a cross sectoral Digital Copyright Exchange. Government should appoint a senior figure to oversee its design and implementation by the end of 2012. A range of incentives and disincentives will be needed to encourage rights holders and others to take part. Governance should reflect the interests of participants, working to an agreed code of practice.*
- *The UK should support moves by the European Commission to establish a framework for cross border copyright licensing, with clear benefits to the UK as a major exporter of copyright works. Collecting societies should be required by law to adopt codes of practice, approved by the IPO and the UK competition authorities, to ensure that they operate in a way that is consistent with the further development of efficient, open markets.*

Extended Collective Licensing

4.48 Digital technology permits mass digitisation so that whole collections – such as national libraries, the BBC archive and private collections – may be made available online. But we are effectively prevented from taking this opportunity because of the transaction costs of assembling all the necessary permissions. The proposed Digital Copyright Exchange would alleviate this problem, but there would still be issues with owners of a small number of works in a collection who had not, possibly by oversight or because they are unknown, put those works into the system.

“As identified by the European Commission’s “i2010” and “Digital Agenda” work programmes, much societal and economic benefit could be derived from digitising and putting online the collections of national libraries, as well as large archives and museums. Not only is there a strong demand for access from consumers for such material, (the Europeana service receiving over 13 million hits an hour at its launch), there is also strong evidence from technology SMEs and large telecommunication companies such as Orange, presented to the Comité des Sages November 2010 hearing, as to their demand for more digital content to be made available online in order for them to build new and innovative products and services around the content.” *JISC submission*

4.49 There is an urgent need for an efficient way to license collections of works in as straightforward a manner as possible, enabling transaction costs to be kept to a minimum.

4.50 Respondents to the Review, from sectors including music, TV, visual arts and archives, advocate a legal mechanism known as Extended Collective Licensing (ECL), to support mass licensing in specific areas. Where it has been enabled by national legislation, ECL can permit a copyright licensing body (for example, a collecting society) which already operates on behalf of most of one class of rights holders in a sector (for example, literary authors), to assume the ability to represent in addition the other rights holders in that class who have not explicitly joined up to the organisation.

“The rights clearance regime needs to address both the need for a more streamlined and expedient process and the development in recent years of “licensing-light” formulas to give creators and users an especially flexible framework, which is conducive to creative exchange, quotation and other derivative uses. One possible effective tool in reducing the complexity of rights clearance is extended collective licensing.” *BSAC (British Screen Advisory Council) submission*

4.51 The simplified regime can be good for users by providing legal certainty, good for creators because it delivers remuneration, and good for consumers because it extends access to works. It should not be imposed on a sector as a compulsory measure where there is no call for it, and individual creators should always retain the ability to opt out of ECL arrangements. There are successful precedents elsewhere in Europe.^{iv} The Review supports an extended collective licensing arrangement in the UK.

Orphan Works

4.52 The problem of orphan works – works to which access is effectively barred because the copyright holder cannot be traced – represents the starkest failure of the copyright framework to adapt. The copyright system is locking away millions of works in this category. The British Library points to findings by the Arrow study of an orphaning rate of 40 per cent in some EU archives.

4.53 As long as this state of affairs continues, archives in old formats (for instance celluloid film and audio tape) continue to decay, and further delay to digitisation means some will be lost for good. Beyond this cultural negligence, the unnecessary restriction on access involved in orphan works can, when applied to scientific papers, even affect life saving research, as can be seen from the malaria research example discussed in the next chapter. Action on this issue cannot be deferred any longer.

During 2005-2007 the British Library undertook a project to digitise over 4,000 hours of sound recordings and make them available online for researchers. One part of the project involved the digitisation of 220 oral history recordings of jazz musicians and promoters made in the late 1980s. In 2005-6 they pursued all 200 identifiable outstanding permissions, but 53 could not be traced. Thirteen had died. The orphan works problem defeated even a relatively simple challenge – a group of works created relatively recently, each involving only two performers – the interviewer and the interviewee.

^{iv} ECL has been in operation in the Nordic countries since the 1960s, used initially in broadcasting and now more widely. KOPINOR, a large umbrella for Norwegian collecting societies has concluded a complex agreement with the Norwegian National Library for making approximately 50,000 works by Norwegian authors available on the Internet. This took only two months to complete.

4.54 It is difficult to put a firm value on unlocking orphan works, but it is complacent to assume that value is minimal just because the works are not “in print”. The British Film Institute estimates that if legal provisions enabled it to trade in orphan works it might generate an additional annual gross income for itself of more than £500,000. It is very possible that some real discoveries are hidden in these archives and it is certain that new generations of creators will use some of these works in new ways – just as *Romeo and Juliet* led to *West Side Story* and scores of other adaptations – allowing new economic value to be realised. Opening up orphan works is a move to which there is no national economic downside.

4.55 These works raise particular difficulties in the context of mass digitisation. Libraries and archives seek to digitise collections, and have the technological capacity to do so and to provide access to them for users, but they are unable to act where rights holders cannot be found for some of the works, because to digitise those works could be a copyright infringement. The issue is exacerbated in that where rights information is lacking, it is often not even clear whether works are still in copyright or not. There are two distinct situations to consider: mass licensing of collections which include some orphans, and use of individual orphan works.

4.56 As far as mass licensing goes, a number of submissions to the Review, including that of the British Copyright Council, have suggested the use of extended collective licensing on the Nordic model. The Review agrees with that broad approach. A scheme should involve a diligent search of rights registries (to ensure the supposed orphans are not in fact owned and opted out of the collective licensing scheme). Such searches would be made much easier once the Digital Copyright Exchange proposed in this review is functioning. Following diligent search, a licence would be issued. Any fees paid should be held by the collecting society running the ECL scheme until the owner is identified, or a reasonable period of time elapses, in which case the monies should be used for social or cultural purposes, or perhaps as a contribution to the running costs of the Digital Copyright Exchange.

4.57 For licensing of individual works, a similar system can be envisaged, but a more tailored approach is possible. That would involve Government granting an authorisation to deal in a specific work where the copyright owner has not been found or identified after a diligent search. Should an owner later come forward, future use of the work from that point would be subject to negotiation, but there would be no liability for past use beyond any licence fee set by Government or its appointed agent.

4.58 The system should also not impose inappropriate costs, particularly on use of materials which were not created for commercial purposes, or which might be found to be out of copyright if the rights information were available. Therefore, in most cases the fee for use of orphan works would be nominal, recognising that the works involved represent a national treasure trove. We recognise that there will be concerns from some rights holders who fear that a growing resource of almost free to use orphan works could injure markets for other works. This is a good example of a case where wider economic interest outweighs the perceived risk to rights holders.

4.59 Tying the orphan works solution into the Digital Copyright Exchange will also provide a straightforward means of determining whether a search for the rights holder is sufficiently “diligent” – and should provide rights holders with a further incentive to join the scheme. The Exchange also offers a built in mechanism for dispute resolution, and safeguards against works becoming orphaned as discussed above. We note that the submission from photographers’ representatives Stop 43 puts forward a strong case for the benefits of a digital metadata registry in preventing works from being unjustly orphaned, and, where they have been, for restoring rights information. The Digital Copyright Exchange could be the authorising body for orphan works.

Recommendation: Orphan works.

The Government should legislate to enable licensing of orphan works. This should establish extended collective licensing for mass licensing of orphan works, and a clearance procedure for use of individual works. In both cases, a work should only be treated as an orphan if it cannot be found by search of the databases involved in the proposed Digital Copyright Exchange.

4.60 The European Commission is currently considering a limited (and expected to be non-commercial) initiative in the area of orphan works.¹⁸ The UK has the chance to take a lead by implementing a flexible and comprehensive national level solution, for which there is an evident appetite from many parties.

Chapter 5

Copyright: Exceptions for the Digital Age

5.1 There are two circumstances in which it is permissible to make use of copyrighted works. The first, considered in the previous chapter, is where the rights holder has given permission. The second, the subject of this chapter, is where the law places some acts outside the coverage of copyright – copyright exceptions.

5.2 In the UK, exceptions have failed to keep up with technological and social change, leading to widespread consequences. Technology has expanded the potential for communication, research, learning and access to resources, but out of date rules mean this potential is not fully realised. The UK's world class universities – a sector of strategic importance to future growth, both as source of skilled people and knowledge – find this on a daily basis.

5.3 Researchers want to use every technological tool available, and they want to develop new ones. However, the law can block valuable new technologies, like text and data mining, simply because those technologies were not imagined when the law was formed. In teaching, the greatly expanded scope of what is possible is often unnecessarily limited by uncertainty about what is legal. Many university academics – along with teachers elsewhere in the education sector – are uncertain what copyright permits for themselves and their students. Administrators spend substantial sums of public money to entitle academics and research students to access works which have often been produced at public expense by academics and research students in the first place. Even where there are copyright exceptions established by law, administrators are often forced to prevent staff and students exercising them, because of restrictive contracts. Senior figures and institutions in the university sector have told the Review of the urgent need reform copyright to realise opportunities, and to make it clear what researchers and educators are allowed to do.

5.4 Copyright involves a necessary balancing of divergent interests. When new opportunities arise, the law sometimes needs to adapt so that the right balance is maintained. In education and research in particular, but also in other fields including everyday consumer behaviour, there is a clear need to make that adaptation happen.

Copyright Exceptions

5.5 Copyright exceptions are designed to allow uses of content that offer benefits deemed either more important than those delivered by the core aims of copyright and/or benefits that do not significantly detract from those aims. The copyright exceptions for educational purposes and for research are intended to promote knowledge, skills and innovation in the economy, without unduly undermining the incentive for educational and academic publishers to create the works that students, teachers and researchers need. International law places restrictions on the use of exceptions, so that they may not compromise the rights holder's legitimate interests and the normal exploitation of the work.^v

5.6 EU law confines copyright exceptions to a closed list of categories, such as criticism, news reporting, research, or archiving. Almost all are restricted to non-commercial uses. Individual EU countries may implement exceptions within these categories to a greater or lesser degree, but there is no flexibility to create exceptions in new areas. The UK does not currently exploit all the exceptions available. Most notably, we do not have exceptions for private copying or for parody and the exception for archiving falls well short of current needs. Previous attempts to modernise this framework in the UK have not succeeded.

5.7 Several responses to the *Call for Evidence* emphasised the complexity of copyright law, and in particular how to apply the exceptions regime in current circumstances.

“During the course of a learning activity children will cross over the multiple boundaries and traverse the vagaries of copyright and licensing. They will trip over ‘orphans’, bump into third party rights, be turned away by pay-for services, use licensed and make their own materials – often without knowing that there are multiple copyright dimensions to what they are doing, because, who can know all about copyright?” *National Education Network submission*

5.8 We address this issue in Chapter 10, where we recommend the IPO take on an additional role in providing interpretations of the law, which the courts would have to take into account, to increase certainty in the system.

5.9 The US has a more flexible approach to copyright exceptions. It includes the concept of “Fair Use”, a defence in the US copyright framework which builds on certain general principles through case law to develop permitted uses of copyright works. Fair Use serves a number of purposes in the US, fixing what might otherwise be imbalances in the copyright system.

^v The Berne Convention (incorporated in the TRIPs Agreement) limits the range of exceptions by a three step test. This requires that exceptions are confined to certain special cases which do not conflict with a normal exploitation of the work and do not unreasonably prejudice the legitimate interests of the rights holder.

5.10 Under the European approach to exceptions, new kinds of copying which have become possible due to advancing digital technology are automatically unlawful. They require agreement of rights holders if they fall outside the pre-established and closed list of categories for permissible exceptions. Even copying which falls within one of the permissible areas at EU level can still require new action by national legislatures to create or develop the exception to meet new needs. The risk in this situation is twofold:

- Innovation may be blocked and growth hampered when unduly rigid applications of copyright law enables rights holders to block potentially important new technologies. We have experienced this when the interests of rights owners have put them in conflict with developers of video recorders and web search engines. Research scientists, including medical researchers, are today being hampered from using computerised search and analysis techniques on data and text because copyright law can forbid or restrict such usage. As data farming becomes routine in systems across the economy, from the management of transport to the administration of public services, copyright issues become ever more important as potential obstacles. In these circumstances, copyright in its current form represents a barrier to innovation and economic opportunity.
- A second and also significant problem is that we have in recent years witnessed a growing mismatch between what is allowed under copyright exceptions, and the reasonable expectations and behaviour of most people. Digital technology has enabled use and reuse of material by private individuals in ways that they do not feel are wrong – such as sharing music tracks with immediate family members, or transferring a track from a CD to play in the car. It is difficult for anyone to understand why it is legal to lend a friend a book, but not a digital music file. The picture is confused by the way some online content is now sold with permissions to format shift (iTunes tracks) or to “lend” files (Amazon ebooks) at no extra cost. This puts the law into confusion and disrepute. It is not a tenable state of affairs.

5.11 Among the economic implications is the danger, which attends all legal uncertainty, of eroded incentives for consumers to purchase and for investors to invest, which is precisely what we hear reported, for example in the UK music industry. Commercially it leaves rights holders with an unsatisfactory choice between having rights they cannot or do not enforce, or seeking to preserve legal entitlement to payment for acts of private use and reuse, which ordinary consumers regard as part of normal use. This alienates customers and puts the state in a position where it is invited to “choose sides” between rights holders and citizens. Effective enforcement of the law, in these circumstances, can become impossible.

Fair Use

5.12 By contrast the US approach enables judges to take a view as to whether emerging activities in relation to copyright works should legitimately fall within the scope of copyright protection or not. Fair Use provides a legal mechanism that can rule a new technology or application of technology (like shifting music from a CD to a personal computer) as legitimate and not needing to be regulated, so opening the way to a market for products and services which use it. It has been suggested that this is one of the factors creating a positive environment in the US for innovation and investment in innovation.^{vi} Fair Use offers a zone for trial and error, for bolder risk taking, with the courts providing a backstop to adjudicate objections from rights holders if innovators have trespassed too far upon their rights.

“The founders of Google have said they could never have started their company in Britain. The service they provide depends on taking a snapshot of all the content on the internet at any one time and they feel our copyright system is not as friendly to this sort of innovation as it is in the United States. Over there, they have what are called “fair use” provisions, which some people believe gives companies more breathing space to create new products and services.” *David Cameron, November 2010, announcing the Review of IP and Growth.*

“With the emergence of ever new platforms and formats for creative content existing exceptions and fair dealing provisions in UK law have become outdated. UK copyright law currently makes everyday consumer activities, such as back-up and format-shifting of music, films and e-books, illegal. The law needs to be updated urgently if it is to remain relevant; copyright law also needs to be future proof so that primary legislation does not have to be updated in step with technological advances. Ultimately copyright law should be relevant to consumers, and provide certainty to the creative and the technology industry which innovates within the limits of the regulatory framework.” *Consumer Focus submission*

5.13 In its Terms of Reference, the Review was specifically asked to investigate the benefits of Fair Use and how these might be achieved in the UK. Much of the evidence submitted to the Review on exceptions focuses, however, upon two subtly different questions: the perceived pros and cons of the US Fair Use approach in general and the desirability or not of transplanting it to the UK.¹ Most responses to the Review from established UK businesses were implacably hostile to adoption of a US Fair Use defence in the UK on the grounds that it would bring: massive legal uncertainty because of its roots in American case law; an American style proliferation of high cost litigation; and a further round of confusion for suppliers and purchasers of copyright goods.² These are important arguments.

5.14 By contrast many submissions also recognise that copyright needs to accommodate some unlicensed copying that is considered to be fair, in the ordinary sense of the word: whether that involves transferring CD files to a laptop and MP3 player or sharing a family home movie on your Facebook page which makes incidental use of copyright material.

^{vi} By Google and other (mainly American) technology companies.

5.15 In response to the arguments against Fair Use, it is also worth noting that the creative industries continue to flourish in the US in the context of copyright law which includes Fair Use. It is likewise true that many large UK creative companies operate very successfully on both sides of the Atlantic in spite of these differences in law. This may indicate that the differences in the American and European legal approaches to copyright are less troublesome than polarised debate suggests. But this does not stop important American creative businesses, such as the film industry, arguing passionately that the UK and Europe should resist the adoption of the same US style Fair Use approach with which these firms coexist in their home market.

5.16 It is equally true, however, that the economic benefits imputed to the availability of Fair Use in the US have sometimes been overstated.³ When the Review briefly visited Silicon Valley in February, providing the opportunity to meet companies such as Google, Facebook, Yahoo and Yelp, along with investors, bankers, lawyers and academics, a consistent story emerged, namely that Fair Use is (from the viewpoint of high technology companies and their investors) just one aspect of the distinctiveness of the American legal framework on copyright, albeit in the view of most an important part. In such discussions, the “safe harbour” provisions of the Digital Millennium Copyright Act are usually mentioned as another part of the legal context which encourages risk taking and innovation by protecting platform providers from legal responsibility for content carried on their networks. Google, however, does argue^{vii} that Fair Use was vital to the successful emergence of the indexing and search technology which has turned it into one of the most valuable and dynamic companies in the world. Facebook likewise believes that a global business based upon user generated content required a flexible legal view of copyright to enable it to emerge with its highly successful business model.

5.17 Does this mean, as is sometimes implied, that if only the UK could adopt Fair Use, East London would quickly become a rival to Silicon Valley? The answer to this is: certainly not. We were told repeatedly in our American interviews, that the success of high technology companies in Silicon Valley owes more to attitudes to business risk and investor culture, not to mention other complex issues of economic geography, than it does to the shape of IP law. In practice, it is difficult to distinguish between the importance of different elements in successful industrial clusters of the Silicon Valley type. This does not mean that IP issues are unimportant for the success of innovative, high technology businesses. The Review’s judgment is that they are of growing importance and that they merit serious attention from the UK Government.

5.18 There are also learning points from elsewhere. Some other countries see a need for similar flexibility to embrace new economic opportunities. The Philippines has a Fair Use doctrine, Israel adopted one in 2008, and Singapore uses a Fair Use type multi factor test within its fair dealing. The recently elected Irish Government has launched a review of copyright in the digital environment which will consider moving towards a Fair Use style doctrine, among other issues. But even if the UK were to set aside the powerfully stated objections of the UK creative sector and potentially in the future join forces with the Irish Government or others to promote a Fair Use exception in Europe, the result would be a very protracted political negotiation, against a highly uncertain legal background. Evidence considered by the Review on the legal arguments about the feasibility of introducing Fair Use into the

vii Google argued this point to the Gowers review in 2006, and in its submission to the current Review.

EU legal framework and so into the UK is violently diverse. It ranges from those who argue that it could, in effect, be achieved within the terms of current EU law,^{viii} to those who see this as definitively impossible.

5.19 The advice given to the Review by UK Government lawyers is that significant difficulties would arise in any attempt to transpose US style Fair Use into European law. It is against this background that the Review has stuck to its Terms of Reference and sought to isolate the particular benefits for economic growth that Fair Use exceptions provide in the US, with a view to understanding how these benefits can be most expeditiously obtained in the UK.

Copyright and Technological Change

5.20 Copyright law was never intended to be an instrument for regulating the development of consumer technology. But where it can block or permit developments or applications of technology that is precisely what it becomes. When this happens, copyright's significant economic benefits as a mechanism to incentivise individual creativity need to be measured against their negative impact in impeding innovation elsewhere in the economy. Copyright holders have a long history of resisting the emergence of technologies which threaten their interests, including audio tape recorders and VHS recorders. When the first sound recording technologies emerged, some music rights holders opposed the recording of music. At that time, it was the recorded music industry who were seen as dangerous innovators.

5.21 For policy makers, working within the European system of specific exceptions to copyright, the challenge has been to construct exceptions to allow the use of such technologies in a way that makes the exceptions technology neutral and so capable of adapting to subsequent waves of change. A successful example is the time shifting exception introduced in 1988, which allowed consumers to record TV programmes and view them later. Because it was not written in terms that specified video tape (the main technology of the time) it could be adapted to other technologies be they DVD-R or hard disks as they emerged. The exception was thus able to support innovation rather than inhibit it. But this is not always the case.

Researching Malaria

About five per cent of the world's population is infected with malaria, a parasitic infection which kills around 800,000 people annually (mainly children). Malaria is estimated to cause a reduction in economic growth in sub-Saharan Africa of up to 1.3 per cent per annum.⁴

During the first half of the twentieth century tens of thousands of patients with neurosyphilis were intentionally infected with malaria. This treatment, which cured a proportion of patients, is unique in the history of medicine, and the resulting literature contains a wealth of knowledge relating to the biology of the disease. The Mahidol-Oxford Tropical Medicine Research Unit, based in Thailand and supported by the Wellcome Trust, is interested in making generally available to researchers a set of some 1,000 journal papers from the first half of the twentieth century describing malaria in indigenous peoples, soldiers, and details of malaria therapy – a unique and unrepeatable experiment. This

viii Analysis provided to the Review by Professor Lionel Bently

information offers potentially significant insights for the development of methods for preventing and treating malaria today.

It is often impossible to establish who are the copyright holders in these articles, many of which appeared in long defunct journals – they are orphan works. Copying them to make them generally available in online form would break the law. Reproducing individual illustrations and diagrams in articles is not possible. If the orphan works problem could be overcome it would still not be possible to text mine them – copy the articles in order to run software seeking patterns and associations which would assist researchers – without permission from the copyright holders who can be found, since there is no exception covering text mining. Even overcoming those obstacles would not guarantee that text mining would be possible in future cases. For that any new text mining exception must also include provision to override any attempt to set it aside in the words of a contract.

The malaria papers remain unavailable to researchers because of rights clearing requirements which appear out of all proportion to any benefit the rights holders would be likely to want if they could be found. According to the Wellcome Trust, 87 per cent of the material housed in UK's main medical research database (UK Pub Med Central) is unavailable for legal text and data mining.

5.22 So the question is how to build in sufficient flexibility to realise the benefits of new technologies, without losing the core benefits to creators and to the economy that copyright provides. In the US, Fair Use has successfully fulfilled this role in a small number of cases which have been extremely important for the development of consumer technologies, notably those relating to reverse engineering,^{ix} home video recording, and internet search caching and thumbnail images.

5.23 In order to make progress at the necessary rate, the UK needs to adopt a twin track approach: pursuing urgently specific exceptions where these are feasible within the current EU framework, and, at the same time, exploring with our EU partners a new mechanism in copyright law to create a built-in adaptability to future technologies which, by definition, cannot be foreseen in precise detail by today's policy makers. This latter change will need to be made at EU level, as it does not fall within the current exceptions permitted under EU law. We strongly commend it to the Government: the alternative, a policy process whereby every beneficial new copying application of digital technology waits years for a bespoke exception, will be a poor second best.

5.24 We therefore recommend below that the Government should press at EU level for the introduction of an exception allowing uses of a work enabled by technology which do not directly trade on the underlying creative and expressive purpose of the work (this has been referred to as “non-consumptive” use⁵). The idea is to encompass the uses of copyright works where copying is really only carried out as part of the way the technology works. For instance, in data mining or search engine indexing, copies need to be created for the computer to be able to analyse; the technology provides a substitute for someone reading all the documents. This is not about overriding the aim of copyright – these uses do not compete with the normal exploitation of the work itself – indeed, they may facilitate it. Nor is copyright intended to restrict use of facts. That these new uses happen to fall within the scope of copyright regulation is essentially a side effect of how copyright has been defined, rather than being directly relevant to what copyright is supposed to protect.⁶

ix Reverse engineering is, in effect, taking something apart to see how it works. To reverse engineer software, it is necessary to make a copy of it.

Copyright Exceptions: UK Options

5.25 The future proofing of the exceptions regime discussed above will, as noted, need to be negotiated at EU level and may, as is often the case with EU negotiations, take many years. In the interim, action should be taken at UK level to deal with those areas where the current UK regime has already become outdated.

Enabling New Research Tools

5.26 Text mining is one current example of a new technology which copyright should not inhibit, but does. It appears that the current non-commercial research “Fair Dealing” exception in UK law will not cover use of these tools under the current interpretation of “Fair Dealing”.^x In any event text mining of databases is often excluded by the contract for accessing the database.⁷ The Government should introduce a UK exception in the interim under the non-commercial research heading to allow use of analytics for non-commercial use, as in the malaria example above, as well as promoting at EU level an exception to support text mining and data analytics for commercial use.

Private Copying / Format Shifting

5.27 EU law permits Member States to introduce an exception for private copying, provided that fair compensation is paid.^{xi} In other EU countries private copying exceptions are supported by levies on copying equipment, but the schemes vary greatly in terms of the size of levies, what they are charged on, and how the revenues are used.⁸

5.28 The UK has a thriving market for personal media devices which rely on private copying. We see no economic argument for adding an extra charge to these devices in order to authorise reasonable private acts which are part of the normal use of devices. Indeed, without that copying, normal use of those devices would be largely restricted to playing music or films bought online. We are not aware of strong evidence of harm to rights holders done by this kind of private copying in the normal course of using digital equipment to play works. There is considerable evidence of overall public benefits from consumer use.

x Directive 2001/29/EC of the European Parliament and of the Council of 22 May 2001 on the harmonisation of certain aspects of copyright and related rights in the information society (The so called InfoSoc Directive)

xi Member States may provide for exceptions or limitations to the reproduction right provided for in Article 2 in the following cases:

(b) in respect of reproductions on any medium made by a natural person for private use and for ends that are neither directly nor indirectly commercial, on condition that the rightholders receive fair compensation which takes account of the application or non-application of technological measures referred to in Article 6 to the work or subject-matter concerned;

5.29 There is a recent example of the detrimental effects of the UK's failure to keep up with developments in consumer technology. The Brennan J7 music player, the brainchild of Martin Brennan, a young British entrepreneur, enables consumers to store music from CDs which they have purchased on its hard disk, making them easily accessible for playing from one point. It is hard to see this product as an undesirable innovation, or to see it as requiring actions any different than those already done by millions of consumers with other digital music players. However the Advertising Standards Authority has ruled (understandably, given where the law stands) that advertisements for the Brennan should include a warning that using it involves copyright infringement. The UK cannot afford to place unnecessary obstacles in the way of innovation in consumer products.

"My company is possibly one of the best examples of the sort of SME that can help lead this country out of the recession – 10,000% growth in 30 months during the recession – but out of date legislation and red tape may sabotage my growth. It is no exaggeration to say that this matter has caused me more sleepless nights and wasted days than any other in my company's history... Aside from legal headaches I face the cost of reassuring customers that record companies will not sue them. It's daft because US companies Apple and Microsoft have been selling format shifting products in the UK for a decade." *Martin Brennan, J7 Music Player designer*

"As a matter of general principle the exception should, on the one hand, be drawn as broadly as possible to embrace all those acts of format shifting which everyone knows are happening as a matter of course, and that most reasonable people believe already are, or should be, permissible. On the other hand, it is imperative the exception remains narrow and sufficiently limited so that it causes no significant harm to rights holders and, as such does not give rise to a requirement for payment of compensation in accordance with the EU Copyright Directive 2001/29/EC." *Nokia submission*

5.30 The Review favours a limited private copying exception which corresponds to what consumers are already doing. As rights holders are well aware of consumers' behaviour in this respect, our view is that the benefit of being able to do this is already factored into the price that rights holders are charging. A limited private copying exception which corresponds to the expectations of buyers and sellers of copyright content, and is therefore already priced into the purchase, will by definition not entail a loss for right holders.

5.31 The Government should introduce an exception to allow individuals to make copies for their own and immediate family's use on different media. Rights holders will be free to pursue whatever compensation the market will provide by taking account of consumers' freedom to act in this way and by setting prices accordingly.

Other Copyright Exceptions

5.32 There are some other exceptions which could be implemented in the UK without changes to EU law and which would be beneficial to the UK economy: extension of the non-commercial research exception to all forms of copyright work; extension of archiving; and an exception for parody and pastiche.

5.33 We have already argued that research should not be unnecessarily impeded by copyright in relation to data mining. The research exception needs to be modernised to cover the full range of media.

5.34 We have noted too that libraries are inhibited in preserving content through digitisation, that they cannot preserve all categories of works and that as a result, works continue to deteriorate. This makes no sense and it should be uncontroversial to deliver the necessary change by extending the archiving exception, including to cover fully audio visual works and sound recordings. Supporting the potential of new technologies for archiving will prevent the loss of works, and could open the way to new services based on digital use of those archives. We may well find that this public digital archive turns out to have considerable economic as well as social and cultural value, but this will not happen if our cultural institutions are prevented from securing it through digitisation.

5.35 As for an exception in copyright law to permit parody, the most important issues in that area concern freedom of expression and in that respect sit outside this review's terms of reference. Here too, however, there is an economic link. Video parody is today becoming part and parcel of the interactions of private citizens, often via social networking sites, and encourages literacy in multimedia expression in ways that are increasingly essential to the skills base of the economy. Comedy is big business.

5.36 A good example of homemade parody is *Newport State of Mind* (based upon *Empire State of Mind*, a hit song by the American rapper Jay-Z). The music video parody, written by M J Delaney and performed by Alex Warren and Terema Wainwright, achieved great success when posted on YouTube last year, but resulted in action by the right owners to exercise their legitimate authority under UK copyright law to have it removed from the internet. In the US, many previous parodies of the same original song have not attracted such action, perhaps because US Fair Use can protect parodies. In practice, the offending video has remained both visible and popular, giving rise to further parodies in response. One of these was from the Newport rapper Goldie Lookin' Chain; another by this year's BBC Comic Relief team, featuring a galaxy of Welsh stars from John Humphrys to Bonnie Tyler. Given that the IPO has its headquarters in Newport (a point un-noted by all of the parodists) future PhD students may well find deeper layers of meaning in this sequence of creations, which together amount to a persuasive satire upon the confusion of UK copyright law.

5.37 Summing up, the case for introducing and updating these exceptions is strong in both cultural and economic terms. Using the full range of these exceptions will reduce transaction costs and stimulate new works in growing sectors of the creative economy. A healthy creative economy should embrace creativity in all its aspects. A legally sound structure would not be mocked by pervasive infringement by otherwise law abiding citizens and organisations with the stature of the BBC.

5.38 The failure to adopt these exceptions, despite the previous Government's acceptance of Gowers' recommendation five years ago, is a clear demonstration of the failure of the copyright framework to adapt. The Government must ensure that this failure is remedied.

Making Exceptions Mandatory

5.39 At present it is possible for rights holders licensing rights to insist, through licensing contracts, that the exceptions established by law cannot be exercised in practice.

“A recent study analysed 100 contracts offered to the British Library and found numerous examples of the diversity of contracts and licences, as well as demonstrating that contracts and licences often override the exceptions and limitations allowed in copyright law. This imbalance must be addressed, as licences should never substitute for legislation on core matters such as exceptions and limitations. The licensing framework now underpins much of the content online and contracts rather than copyright dictate how content can be used. Legislation must be amended to ensure that contracts are prevented from overriding copyright exceptions.” *LACA submission (Libraries and Archives Copyright Alliance)*

5.40 Applying contracts in this way means a rights holder can rewrite the limits the law has set on the extent of the right conferred by copyright. It creates the risk that should Government decide that UK law will permit private copying or text mining, these permissions could be denied by contract. Where an institution has different contracts with a number of providers, many of the contracts overriding exceptions in different areas, it becomes very difficult to give clear guidance to users on what they are permitted. Often the result will be that, for legal certainty, the institution will restrict access to the most restrictive set of terms, significantly reducing the provisions for use established by law. Even if unused, the possibility of contractual override is harmful because it replaces clarity (“I have the right to make a private copy”) with uncertainty (“I must check my licence to confirm that I have the right to make a private copy”). The Government should change the law to make it clear no exception to copyright can be overridden by contract.

Recommendation: Limits to copyright.

Government should firmly resist over-regulation of activities which do not prejudice the central objective of copyright, namely the provision of incentives to creators. Government should deliver copyright exceptions at national level to realise all the opportunities within the EU framework, including format shifting, parody, non-commercial research, and library archiving. The UK should also promote at EU level an exception to support text and data analytics. The UK should give a lead at EU level to develop a further copyright exception designed to build into the EU framework adaptability to new technologies. This would be designed to allow uses enabled by technology of works in ways which do not directly trade on the underlying creative and expressive purpose of the work. The Government should also legislate to ensure that these and other copyright exceptions are protected from override by contract.

5.41 The approach advocated here stops short of advocating the big once and for all fix of the UK promoting a Fair Use copyright exception to the EU, as recommended by Google and under examination by the Irish Government. We do so because we believe that the economic benefits of a more adaptive copyright regime are more likely to be attained in practice by the approach recommended above and because there are genuine legal doubts about the viability of a US case law based legal mechanism in a European context.

5.42 It is this review's judgment that lack of progress in achieving an adaptive copyright framework will impose mounting costs on the UK and indeed the EU economy. Adjustment will take place sooner or later. The Review urges the Government to give a constructive and engaged lead to a process from which the UK has much to gain.

Chapter 6

Patents

6.1 The relationship between the patent system and innovation is changing, as the nature of innovation changes: digitisation decreases the costs of innovation and increases the scope for collaboration. IPRs are becoming more important as innovation becomes a primary competitive advantage in the global economy.

6.2 The UK's patent system has played a well understood role in supporting innovation and economic growth in important areas of the economy from pharmaceuticals to information technology and advanced manufacturing. The system is designed to give incentives:

- to invention, by enabling inventors to protect new ideas and secure a return for their effort;
- to exploitation, by giving the producer of an invention exclusive rights, in the market;
- to disclosure and sharing of technology, so that innovators can learn from advances made by others and build on them.

6.3 The evidence and representations to the Review from its users suggest that the UK patent system is, on the whole, functioning reasonably well.

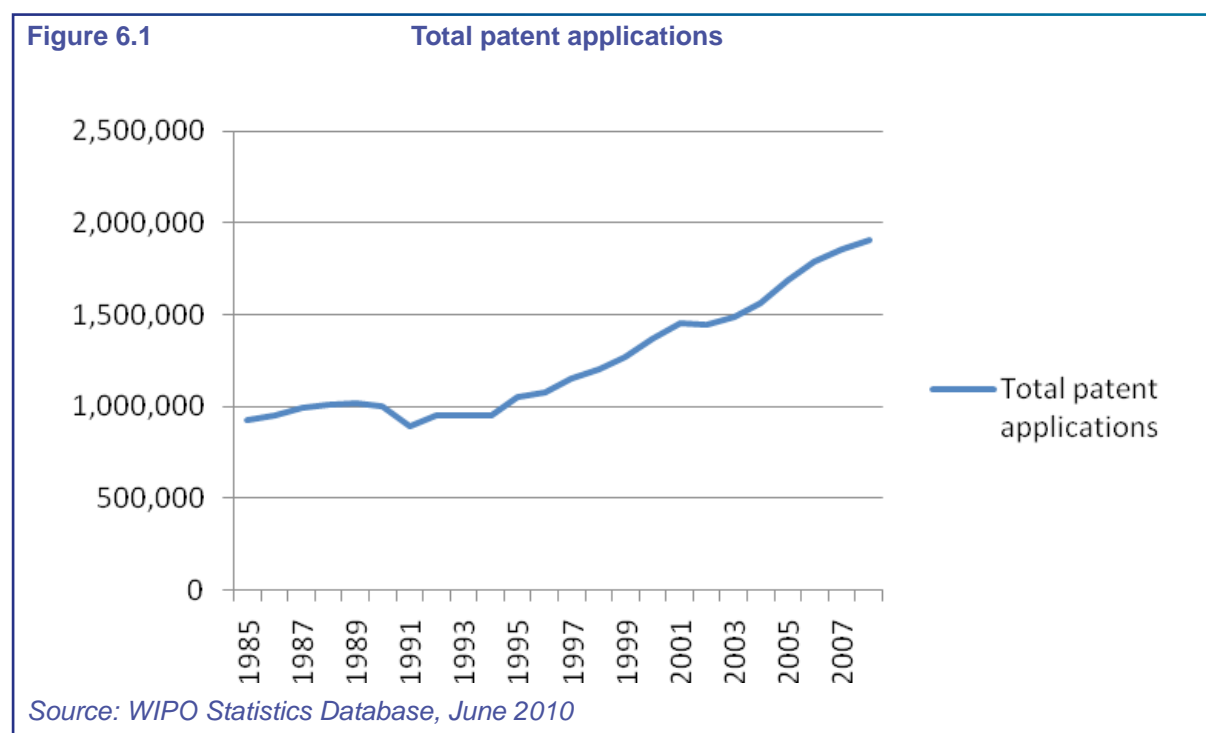
“The current UK intellectual property system is fit for purpose, and supports one of the world’s most vibrant markets for technology, creativity, innovation and growth, among a wide spectrum of companies and industry.” *Microsoft submission*

“Our view is that the patent system and indeed the broader intellectual property system, works substantially very well for innovative businesses. It is very far from being “broken”.” *Chartered Institute of Patent Attorneys submission*

“The strength of the patent system ensured that Qualcomm was in a position to defend itself and to negotiate agreements to license and commercialise its disruptive technology on an equal footing with very large and sophisticated industry players.” *Qualcomm submission*

6.4 While this is welcome reassurance to those responsible for the UK's IP machinery, these are not the only perspectives relevant to innovation and growth. Although the UK patent system continues to function as an important core mechanism for incentivising innovation, some aspects of the way the system is currently working are a source of concern, because they appear to be causing barriers rather than incentives to innovation.

6.5 The most striking aspect of the patent system in recent years is the worldwide increase in the number of patent applications, as shown in Figure 6.1, causing delays in the granting process.^{xii} These delays have led to backlogs at patent offices. Meanwhile, in some business sectors patent proliferation is causing regulatory blockage in the form of “thickets” of pre-existing patents and pending patents which impede genuine innovators wishing to enter markets.



6.6 One outcome of these pressures is that patents of uncertain validity represent a disproportionately high share of the increase in patent numbers. This may be because they are still to be examined (the pending patents) and because the growth of patenting is strongest in areas such as ICT, where patent scope and validity is inherently more uncertain than in other, less sequential^{xiii} technologies such as pharmaceuticals.

6.7 These defects in the patent system may be particularly problematic for young innovative firms – a group strategically important to the UK's innovation performance.^{xiv} There are warning flags that action is needed now before matters become serious enough to threaten the overall functioning of the system.

xii The USPTO had 708,912 pending patent applications in March 2011, according to www.uspto.gov

xiii In sequential technologies, as discussed below, innovation builds cumulatively on previous inventions and innovations.

xiv In Chapter 9 we report evidence that many young and innovative technology firms find the patent system inaccessible.

6.8 Changes in the way that innovation works and the increased propensity to patent have implications for the role that a modern patent office plays in supporting innovation and growth. These changes also affect the cost/benefit trade-off for society that patents involve. The exclusive right that a patent confers is intended to incentivise innovation. But the presence of patents imposes transaction costs on others arising from the need to identify and license other people's patents, or those associated with disputes over patent rights. A higher total volume of patents leads to increasing transaction costs, particularly in markets which are patent intensive. The cost/benefit trade-off of the patent system may shift away from the socially optimal position – i.e. where innovation incentive benefits outweigh transaction costs by the largest margin.

More Patent Applications: Strain on Patent Offices

6.9 The increasing number of patent applications worldwide has led to large and growing backlogs at most major patent offices. For example, the EPO now takes up to 10 years to grant patents, yet in the UK typically fewer than 50 per cent of patents are renewed beyond the tenth year. Current trends suggest that the number of patent applications is likely to continue to increase, particularly from countries such as India and China, which is working to a government target to double the country's patenting levels. An additional year of waiting time (known as "pendency" in the patenting world) has been estimated to reduce growth due to innovation and enterprise by £7.6 billion in the global economy.¹

6.10 Patent backlogs can generate a spiral of ill effects.² They impose costs by increasing the uncertainty of business decisions, impeding competition or giving a patent applicant an unfair advantage in negotiations. Backlogs may also cause more firms to protect their inventions outside the patent system, entailing a loss in the dissemination of economically important knowledge. Unexamined patent applications, which may be rejected, add to transaction costs on third parties clearing their products and services to ensure they are not infringing patents. Increased pressure on patent offices to examine the large numbers of applications and reduce these backlogs may lead to the grant of even more low quality patents, worsening the costs of uncertainty. This can then precipitate a further downward cycle of increased rates of defensive or "strategic" filing of applications (as firms seek to bolster their own patent portfolios to aid in negotiations), more allegations of infringement and eventually additional litigation. Incorrectly granted patents incur the social costs arising from patent protection without providing the benefit of incentivising true innovation.

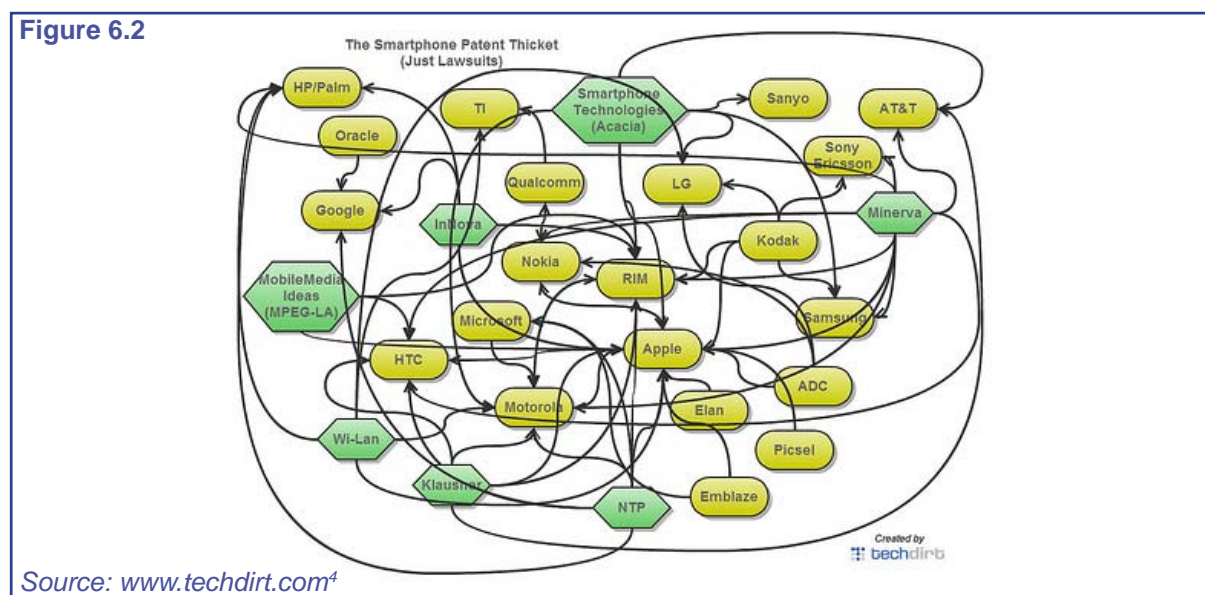
6.11 The examination of patent applications is predicated on a high quality search of the prior art (i.e. the status quo in terms of relevant knowledge at the time of the patent application). Increased numbers of patent applications and the pace of change in digital technologies make searches increasingly onerous for patent offices as the information content they must consider increases. At the same time, this work is often duplicated at other patent offices, which are frequently considering

identical patent applications in different territories. As we have discussed in Chapter 3, improving trust in the system of international search provided by the PCT would provide an opportunity to reduce duplication. Patent office recognition of each others' work as part of work sharing agreements would offer a reduction in duplicated activity, which would make a substantial impact on managing backlogs. By reducing the backlog, and hence pendency times, substantial savings could be made.³

6.12 The UK has taken a commendable lead promoting work sharing measures, actively working with the patent offices in at least six countries as well as the EPO to reduce duplication worldwide and participating in work sharing schemes including the Patent Prosecution Highway (PPH), Vancouver Group Mutual Exploitation and Utilisation Implementation Project (UIP). The United States Patent and Trademark Office (USPTO) has worked closely with the UK IPO, also introducing measures to tackle backlogs. These agreements have begun to reduce the amount of work duplicated at patent offices around the world and there is considerable further scope to extend collaboration. As well as increased work sharing, other patent offices are taking steps to tackle the backlogs by increasing productivity.^{xv} As in copyright, digital technology offers some of the solutions to the challenges it generates in terms of networked global operations in patent examination. The Review encourages the IPO to intensify its pursuit of these improvements.

More Patents: the Growth of Thickets

6.13 A particular danger from increasing numbers of patents is the development of “thickets” of patents with overlapping claims. The result of these is that businesses working at the leading edge of a particular technology may find it difficult or even impossible to know with whom they are in conflict, or whom they should approach for a licence. A current generation smartphone, for example, may well be covered by hundreds of patents owned by tens of rights holders. And these patents are often relevant to multiple phones, particularly if they cover, for example, the communications standards used. The resulting smartphone patent thicket (illustrated below) leads to an environment where litigation is commonplace in a market crowded with patents of overlapping scope.



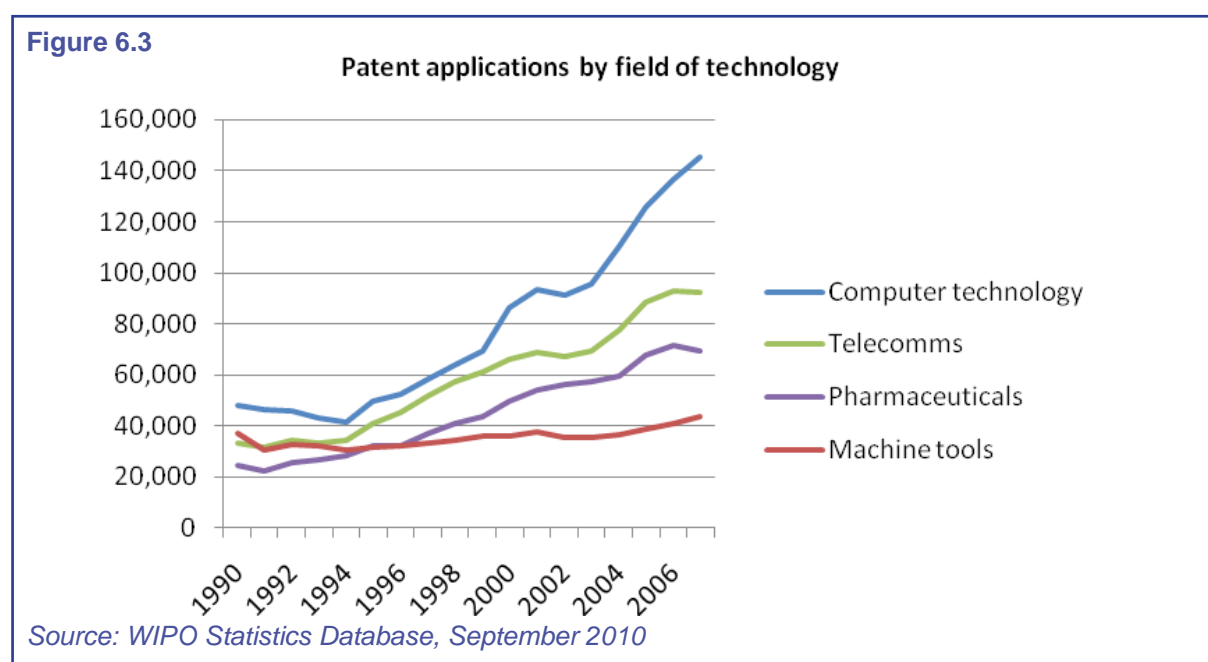
xv The USPTO outlined their approaches to increasing productivity to the Review during a visit to the US.

6.14 As well as added transaction costs, patent thickets encourage strategic or defensive patenting behaviour,⁵ particularly where there is fragmentation of IPRs into the hands of multiple owners.⁶ Strategic patenting behaviour occurs when firms build portfolios of patents for defensive rather than innovative purposes, creating a store of bargaining chips in cross licensing negotiations or as a defensive shield to avoid patent litigation. This intensifies thickets, raises transaction costs, and reduces the market value of private sector firms.⁷

6.15 Strategic patenting behaviour has been further encouraged in some markets by an increase in the number of weak, low value patents.^{8,9} High transaction costs, and the need to overcome strategic behaviours, cause firms to under invest in the commercialisation of downstream technologies resulting in a form of gridlock, sometimes referred to as a “tragedy of the anticommons” in which firms underuse new knowledge because too many owners can block each other.^{10, 11}

Which Technologies are Causing the Problem?

6.16 The increase in numbers of patents and patent applications is at least in part a consequence of the way that the innovation process has changed. But the increase is fuelled in particular by growth in applications for computer technology patents.



6.17 This is important because the evidence that patenting supports innovation is weaker in computer technology and telecoms than in other areas. In these industries, inventions are nearly always “sequential,” where innovation builds cumulatively on previous inventions and innovations, rather than non-sequential, where a patent generally corresponds to a single product and knowledge is not particularly cumulative.

6.18 Research has established that patents encourage innovation in non-sequential fields where upfront costs are high, such as drug development.^{12,13,14,15,16} But with the growing importance of sequential technologies, innovation across the economy is becoming more cumulative and collaborative in nature, building on previous inventions and innovations. The “patent model” of incentives works less well for these industries, where initial cost does not dominate to the same extent the cost of subsequent reproduction. Further, in a strongly sequential environment it is often unclear where the boundaries of protection afforded by one patent lie in comparison with another. This compounds the thickets problem discussed above.

6.19 Industries working in sequential technologies therefore face a “double whammy”: the incentives provided by patents are reduced, while the negative consequences, in the form of thickets which must be navigated, are increased. This means that while for non-sequential inventions, such as a new drug or medical treatment, having a patent system generally yields higher welfare than not having one; in a fully sequential case, higher welfare and more innovation may be more likely to result from the absence of patenting opportunities.¹⁷ Over time, as digital technology becomes pervasive across the economy, this represents a serious concern.

Paths through the Thickets

6.20 There is no single solution to the growing problem of patent thickets. The market itself has already devised partial solutions in the form of standards, patent pools, and the like. These enable players in a particular area of patenting to set terms for access to each others’ patents. Government can take three further steps to resist the growing damage of patent thickets by:

- preventing the extension of patenting to business sectors where the incentive effect of patents is low compared with the overheads imposed;
- resetting financial incentives for assessing whether to renew patents;
- and ensuring that only high quality patents are granted.

Computer Program (and Business Method) Patents

6.21 Computer programs provide an important example of a sequential innovation environment where the double whammy mentioned above strikes. Given the pace of change in the digital world and the strongly sequential nature of innovation in computer programs, the problems arising from thickets in this environment are particularly severe and it is essential that changes do not worsen the situation.

6.22 Evidence considered by the Review is at best equivocal on the benefit of patentability for computer programs.¹⁸ It has been argued that these patents help small businesses to secure investment (although there is some evidence that this is not the case).¹⁹ But it is not clear that increased patent activity resulting from affording protection to these inventions is associated with increased innovation and any benefits are likely to be outweighed by the negative effects outlined above. Transaction costs associated with thickets appear to be particularly pronounced in the programming industry.²⁰ The burdens of patent clearance and licensing, and the possibility of litigation associated with others’ computer program patents, often discourage innovation.^{21, 22}

6.23 In Europe, in contrast to Japan and the US, there are restrictions laid down by the EPC on how far computer programs may be patented. Programs considered to make a “technical contribution” – such as controlling a robot, or making the internal operation of a computer more efficient – can be patented; general application programs – such as word processing software – cannot.

6.24 However, applications for patents on computer programs face differing interpretations of precisely where this boundary line lies on the part of the EPO and the UK IPO. The EPO, having started from a position similar to the UK, has in recent years become more open to awarding such patents than the IPO. Submissions to the *Call for Evidence* differed on the question of whether computer programs should be afforded patent protection, but many appealed for consistency between the IPO and the EPO.²³

6.25 This presents a dilemma for an evidence-based patent policy; the evidence points to significant benefits arising from European harmonisation (as discussed in Chapter 3), but also to the UK’s current position of denying or at least severely restricting patents to non-technical computer programs. In this case, the Review believes the balance of evidence lies in continuing to withhold patent recognition of non-technical computer programs as part of a sustained effort to deal with the growing and dangerous problem of thickets. The UK should seek to convince its European partners of the force of this case.

6.26 Similar considerations apply to the patenting of business methods²⁴ (for example, particular pricing and marketing schemes) which are also allowed in the US but not in Europe – and unlike in the computer program area, there is no sizeable European lobby arguing for their patenting. Here, the correct course is clear: Europe should continue to resist the patenting of business methods.

*Standards, Patent Pools, and Cross Licensing*²⁵

6.27 Various attempts to tackle the issue of patent thickets have developed within the market. Cross licensing, patent pools and open technology standards²⁶ can be effective measures for navigating a thicket.²⁷ These approaches all involve a community of patent holders coming together and agreeing rules for use of each others’ patents, simplifying licensing problems and reducing the need for litigation, thus alleviating the problems associated with patent thickets.²⁸ Standards setting bodies in particular can also help establish royalty rates. This approach is particularly useful in computer technology products such as mobile phones.

6.28 However SMEs have reported barriers to participation in standards arising from the costs and terms of participation, which are often prohibitive for small firms;²⁹ in some cases, “royalty stacking”, i.e. the accumulation of royalty payments on different patents embodied in a standard, can present insuperable barriers to market entry, particularly to SMEs without patents of their own to cross license.³⁰ The situation is even more severe when a single product embodies numerous standards. A mobile phone, for example, has to support multiple cellular air interface standards (which can amount to 15-20 per cent of the value of the handset for each standard) as well as other operability standards.

“A number of companies own patents that will be essential to implementation of the 4th generation (4G) standard for mobile phones. These companies have made statements on their expected maximum royalty rate for products implementing this standard which amount to around 15% of the product’s sale price, and this only covers part of the technology. The total rate may be higher because other companies will choose not to make public disclosures and the number of essential patents will likely increase as the standard matures.” *Research in Motion submission*

6.29 Additionally, the ability of the patent holder to obtain an injunction against infringing firms, while traditionally fundamental to the property right associated with patents, places the patent holder in a strong position in negotiations or disputes (so called patent “hold up”). Often these infringing firms will be young, small businesses which, in high technology areas, hold fewer patents when the market is more competitive.³¹

“Hold up” is illustrated by the widely publicised patent infringement case between NTP, Inc. and Research in Motion (RIM) who came under enormous pressure to settle the case to avoid a shutdown of their BlackBerry service, eventually paying NTP \$612.5 million to settle the case. This may be more problematic when the patent holder is not involved in manufacture themselves (a non-practising entity (NPE) or “troll”) since a firm attempting to license an NPE’s patent will not be able to use the bargaining chip of cross licensing their own patents to the NPE.

6.30 Thus, although these market solutions offer ways around the thicketing problem, they bring their own difficulties, particularly for the very firms most crucial to innovation. It follows that standards setting and cross licensing pools are valuable, but not a complete answer to the growing problem of thickets and the risk of “gridlock.”

Influencing Patenting Behaviour through Patent Office Fees

6.31 Patent offices have an obvious tool available to them in influencing numbers of patent applications in the form of fees charged for applying for and renewing patents.

In the UK the fee for obtaining a patent is £280. Renewal for the full term of 20 years costs £4,500. In Germany a 20 year term costs £11,500 and in the US £4,700 (or £2,400 for small entities).

6.32 In the UK, patent fees have been set by reference to the IPO’s costs which they need to cover.^{xvi} This reflected wider thinking about Government service delivery organisations, specifically that efficiency and effectiveness is promoted if organisations like the IPO benefit from the degree of autonomy that self funding brings. The UK Government has also, like governments in other countries, wanted to keep fees as low as possible within the framework of self funding, since fees are sometimes attacked as being a form of “taxation” on innovation.

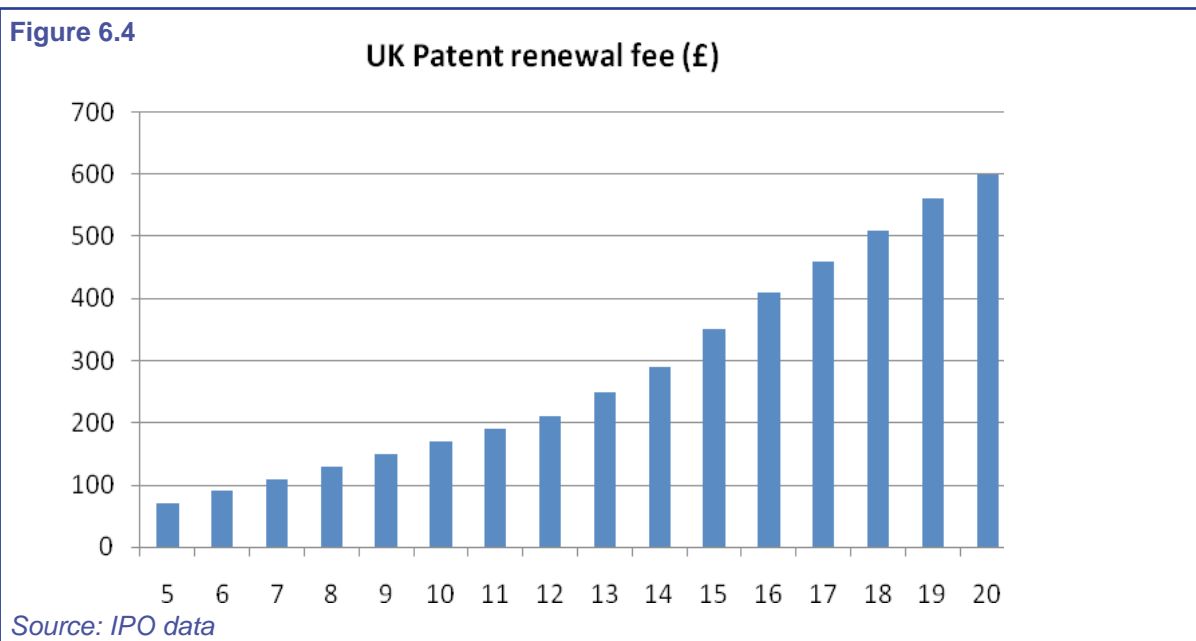
^{xvi} IPO patent fees have been altered relatively infrequently, although they were amended in 2010, perhaps because secondary legislation is required.

6.33 To optimise the IP framework for innovation and growth, there is a strong case for setting patent fees in pursuit of these goals, rather than simply meeting the relatively arbitrary cost level of a patent office. The people best qualified to judge which are the least useful and so most dispensable patents in the system are those who own them. This suggests that patent fees might be set in a way that encourages every patent holder to self screen their patents for value. This would encourage the surrender of less valuable patents, reducing the density of thickets in a way consistent with achieving the maximum net economic benefit. There is growing evidence that fees set at an appropriate level can, in fact, influence the behaviour of patentees.^{32,33,34}

6.34 There are essentially two key types of fee charged by patent offices: fees for making an application and having it processed through to grant (application fees), and fees for maintaining a patent in existence after grant (renewal fees).

6.35 The application fees charged by the UK and other offices are low, and a small share of the cost of applying for a patent. The IPO fee of £280 is a tiny proportion of the £20,700 which we report in Chapter 9 is the average cost to an SME of applying for, maintaining and protecting a patent. Because of this, changes in application fees do not tend to affect behaviour.³⁵ Furthermore, at this early stage, the patent holder's ability to judge the relative value of his patent (or application) is limited by lack of information. Screening at this stage is less likely to be effective in targeting low value patents.

6.36 Renewal fees are, in the UK, paid annually to maintain a patent in force, and they increase gradually each year. Here lie greater possibilities for more effective self screening of patents, particularly after approximately six years from patent grant, when the patent holder has a clearer idea of a patent's value.³⁶



6.37 However, the level of renewal fees required to influence applicant behaviour appears to be quite significant.³⁷ A unilateral attempt to increase renewal fees by the UK would risk a disproportionate impact on UK patent holders compared to the potential gain. This is therefore an area for the UK to explore in the context of international efforts to thin out patent thickets worldwide.

6.38 The evidence shows that SMEs suffer disproportionately from the effects of patent thickets. Given their importance to innovation it would be logical to explore the potential for differentiating the patent fee structure in favour of smaller companies. The current UK patent framework includes a provision for a reduction in renewal fees for patents endorsed with a Licence of Right (which means anyone may obtain a licence at a reasonable rate). These provisions could be built upon as an additional means to reduce renewal costs while having the added benefit of encouraging patentees to make their patents available to third parties, subject to an appropriate royalty fee.

Improving Patent Quality

6.39 Maintaining the quality of patents is fundamental to the remit of all patent offices, though performance around the world varies a great deal. The IPO's record and reputation are strong. In seeking to improve its ability to stay on top of assessment of the "prior art" in the area of digital technology, the IPO is shortly to test an initiative developed by the USPTO to improve access to information and insight outside the domain of formal patent documentation – a so called "peer to patent" approach.^{xviii}

6.40 Following granting of a patent, a post grant opposition process similar to that provided by the EPO offers an effective substitute for early stage post grant litigation, and may offer a more effective means of subjecting weaker granted patents to early challenge.³⁸ The cost of such a process is relatively low in comparison with court proceedings, so measures to discourage strategic use of such a process to create uncertainty would be necessary. In the UK, it is currently possible to obtain revocation of patents by bringing a case before the IPO Tribunal but the UK should learn from the EPO experience.

Conclusion

6.41 The increased numbers of patents and patent applications bring challenges to which thus far only partial solutions have been found. There is no evident single solution to the resulting problems of thickets and the consequent diminished effectiveness of the patent system to incentivise innovation.

xvii www.peertopatent.org

Recommendation: Patent thickets and other obstructions to innovation.

In order to limit the effects of these barriers to innovation, the Government should:

- *take a leading role in promoting international efforts to cut backlogs and manage the boom in patent applications by further extending “work sharing” with patent offices in other countries;*
- *work to ensure patents are not extended into sectors, such as non-technical computer programs and business methods, which they do not currently cover, without clear evidence of benefit;*
- *investigate ways of limiting adverse consequences of patent thickets, including by working with international partners to establish a patent fee structure set by reference to innovation and growth goals rather than solely by reference to patent office running costs. The structure of patent renewal fees might be adjusted to encourage patentees to assess more carefully the value of maintaining lower value patents, so reducing the density of patent thickets.*

Chapter 7

Designs

7.1 Unlike patents and copyright, design was not explicitly mentioned in the Review's Terms of Reference. This is surprising, given the economic importance of UK design and the strength with which a number of issues relating to this area of IP protection have been raised in evidence to the Review.

7.2 Design is a wide ranging concept covering a range of industries from fashion design (apparel) to industrial design. According to new estimates by Imperial College, design constitutes the largest contribution to overall intangible investment in the UK economy.¹ In 2008 investment in design alone amounted to 1.6 per cent of Gross Domestic Product (GDP).²

Protection Available for Designs

7.3 Design right dates from the eighteenth century, and registered design right from the nineteenth. Since 2003 the EU wide Registered Community Design has been an alternative source of registered design protection in the UK. As well as these registered rights protection for designs is available through the (different) EU and UK unregistered design rights, and copyright also protects some designs.

Design Rights – a Patchwork of Protection

There are four different and to some degree overlapping forms of design right in the UK:

- a registered right covering the UK available from the IPO;
- a registered right covering the EU available from the Office of Harmonisation for the Internal Market (OHIM);
- an unregistered right covering the UK;
- an unregistered EU right.

There are also circumstances in which copyright can protect designs, and ones in which trade mark protection is relevant. Within this patchwork are differences as to what forms of design are covered, how long the rights last, what is required to prove infringement, and what the penalties for infringement may be.

7.4 Like copyright and patents the economic argument for design protection rests on the provision of an incentive to innovation whose social benefits exceed the associated costs. It is improbable that a design rights framework optimised to support innovation and growth would feature a multiplicity of overlapping rights.

7.5 Levels of design registration are very low, particularly given the size of the design industries and their success. Around 8,000 – 9,000 UK designs are registered annually, split roughly 50/50 between IPO and OHIM registrations.³ We surmise that the public registration systems do not fully meet users' needs both from these low levels of registration and from the existence of what is in effect a competing register created by the private sector. In their evidence to the Review Anti Copying in Design (ACID) reported that around 30,000 designs are added to their electronic database annually, providing an audit trail to substantiate design ownership should the designer's rights be infringed. This state of affairs – multiple alternative design rights and registers – suggests unnecessary complexity, borne out by our findings about SME experience of the IP system, discussed in Chapter 9.

Evidence

7.6 Design evidence submitted to the Review was predominantly concerned with protection and enforcement issues. The discrepancy in levels of protection between design right (protecting technical design) and copyright (protecting artistic designs such as illustrations) was highlighted. This applied both in terms of duration and availability of rights and their enforcement. ACID in particular was concerned that SME designers' products were routinely copied by major High Street retailers. Unlike copyright, which is supported by criminal sanctions and is therefore of interest to police and trading standards officers, design rights only offer civil sanctions.

7.7 A point made by several designers was the problem of having to tender for contracts with designs which they had little chance of being able to protect, frequently finding their best ideas simply taken without compensation. The designers concerned had invested time and money in developing these designs but either could not afford to take enforcement action or found the law inadequate to do so. This reflected a broader concern over the costs of litigation, and scepticism that design rights could be effectively enforced that has been corroborated in research being conducted for the IPO. This work suggests opinion is divided as to whether registering designs will help protect them from infringement.^{xviii} The development of the Digital Copyright Exchange, set out in Chapter 4 of this review, may well be relevant to the design sector and every effort should be made to include design interests in the creation of this Exchange.

7.8 In general, research is limited on design rights, and the issue is complicated by the wide range of industries involved. Different industries have different levels and types of needs from the IP framework, and they are not yet fully understood. For example, the fashion industry lives with a high rate of appropriation of their designs. They do, however, frequently pursue infringement of their trade marks (i.e. counterfeiting). Controversially, some argue that copying in the fashion industry may actually promote innovation in that once a design is copied this spurs the fashion houses that created the original to move on and design something new.⁴

xviii Preliminary research for the IPO conducted by Imperial College.

Conclusions

7.9 Design has an important contribution to make to growth, and it is unsatisfactory that we start from such a low base of understanding in considering how best to optimise the IP framework to support this growth. The Review has received a good deal of evidence about the difficulties designers encounter in enforcing their rights. Knowledge of the relationship between design rights, and innovation and growth, is inadequate to draw wider conclusions about the implications of these difficulties for growth or for improvements in design rights and enforcement.

7.10 We conclude with an example which highlights the risks associated with the current thinly evidenced and reactive approach to policy. Digital technology is altering the nature of design. It has radically altered the way in which many designs are produced, and the development of fabrication through “3D printing” can be expected to have a substantial impact. This development alone may be sufficient to require reconsideration of the interactions in law between copyright and design. In Chapter 10 we discuss the reactive character of the IP policy machinery. We hope that 3D reproduction does not become a case study in the shortcomings of this approach. The copyright issues associated with 3D reproduction need to be addressed before it becomes a widely used technology if IP law is to enable rather than inhibit the technology’s potential to contribute to growth.

Recommendation: The design industry.

The role of IP in supporting this important branch of the creative economy has been neglected. In the next 12 months, the IPO should conduct an evidence based assessment of the relationship between design rights and innovation, with a view to establishing a firmer basis for evaluating policy at the UK and European level. The assessment should include exploration with design interests of whether access to the proposed Digital Copyright Exchange would help creators protect and market their designs and help users better achieve legally compliant access to designs.

Chapter 8

Enforcement and Disputes

“IPR abuse is widespread and affects a broad swath of industries, from sportswear to pharmaceutical, from creative industry products to everyday household goods. Infringement is the single biggest issue affecting all types of IP rights.” *CBI submission*

8.1 IPRs cannot succeed in their core economic function of incentivising innovation if rights are disregarded. Ineffective rights regimes are worse than no rights at all: they appear to offer certainty and support for reliable business models, but in practice send misleading signals. Widespread disregard for the law erodes the certainty that underpins consumer and investor confidence. In the most serious cases, it destroys the social solidarity which enables the law abiding majority to unite against a criminal minority. These are powerful reasons for supporting effective enforcement of IPRs.

8.2 Many responses to the *Call for Evidence* identified enforcement as the most serious weakness in the UK’s IP framework. Copyright owners especially put stronger Government action against online infringement as their top priority. In this chapter we deal with online copyright infringement and then much more briefly with counterfeit products and the costs of IP disputes.

Online Copyright Infringement

8.3 Some submissions from the creative industries expressed fears that online copyright infringement, or “piracy” threatens the very existence of their businesses, speaking of “catastrophic decline in future markets¹ and “a mortal threat to the economic and creative processes which underpin our business, and consequently to economic growth in the UK.”²

8.4 Even in the pre-digital age, enforcement was not easy. Trading Standards Services and others had to monitor counterfeit products, such as illegal pressings of records supplied from countries with minimal IP safeguards, sold by street vendors and at car boot fairs. These problems persist, as the second part of this chapter indicates.

8.5 However, digital technology has made enforcement significantly more difficult because of the ease with which electronic copies can be made and the perceived anonymity of the online world. Copying and distribution costs have fallen to zero, and many consumers of online products, most notably music, cannot see why they should continue to pay prices based upon those which prevailed in the era of the compact disc. Most also cannot understand, or do not accept, that they are doing anything wrong by transferring a music file from a CD they have bought to an MP3 player, iPod or other device. A survey published by Consumer Focus in February 2010 found that 73 per cent of consumers do not know what they are allowed to copy or record.³ A Harris Interactive Poll for the BPI in 2010 found that 44 per cent of all peer-to-peer (P2P) users stated that they believed their actions to be lawful. The Strategic Advisory Board for Intellectual Property Policy (SABIP) concluded that: “There is also substantial evidence that many individuals do not perceive software piracy to be an ethical problem at all.”⁴

8.6 It is not surprising that consumers are confused. In a world where it is possible to listen to music free on the radio; free or by subscription through a computer or smartphone from a streaming service; or by continuing to put a purchased or borrowed CD in a player, the concept of “ownership” and “purchase” has itself been redefined. Online music providers (and other publishers) operate a variety of business models including: free downloads supported by advertising; free downloads for light users, with premium charges for heavier or advanced use (the so called “freemium” model) and various subscription services, including storage services where consumers can keep “their” libraries. For the browsing consumer, it is not always obvious whether a music service is providing copyright material illegally - unless the supplier chooses to put the skull and crossbones on its mainsail, like Pirate Bay, the Swedish download service established in 2003, which today claims five million users, in spite of the fact that its founders received jail sentences in 2009.

8.7 There is every chance that digital technology will continue to disrupt business models of makers of films and TV programmes, books, newspapers and music.

8.8 The question is: in these circumstances, what does an effective enforcement regime look like? In order to provide a realistic answer to that question, we need to understand the nature, prevalence and dynamics of rights infringement. Only on a base of carefully evaluated evidence can a successful and sustainable enforcement approach be constructed.

Prevalence of Piracy

8.9 Given its importance, you would think that we would have a very clear picture of the scale and dynamics of online piracy, but this is not so. There is no doubt that a great deal of piracy is taking place, but reliable data is surprisingly thin on the ground. There is no shortage of claims about levels of infringement, but in the Review's four months of evidence gathering, we have failed to find a single UK survey that is demonstrably statistically robust. For many surveys, methodology is not available for peer review.

8.10 Measurement of any area of unlawful activity presents statistical challenges: these are not new problems in the world of criminology, where policy analysts are used to drawing different lessons from surveys of victims of crime, general social surveys about crime and police recorded levels of crime. However, for online copyright infringement, there are further complications:

- the offence leaves no physical trace;
- surveys question respondents who have an imperfect understanding of what is within the law in the first place and may be motivated either to deny taking part in unlawful activity or to exaggerate doing so;
- free downloads are not necessarily illegal and paid for downloads are not necessarily legitimate;
- what is legal in one country may not be in another and the internet allows businesses and consumers to trade across boundaries;
- not all P2P file sharing is illegal and not all illegal activity is conducted via P2P (in fact P2P file sharers appear to be moving to other means of accessing music including live streaming);⁵
- studies that have attempted to measure piracy by measuring internet traffic are problematic because other factors affect traffic levels including changes in volumes of spam and increases in broadband speed, which permit much greater volumes of activity, and especially higher density video files.^{xix}

8.11 An indication of the range of estimates for the extent of music piracy in the UK can be seen by comparing a claim made in the BPI's Digital Music Nation report in 2010 that 65 per cent of music downloads are illegal to MidemNet's 2010 Global Music Study figure of 13 per cent for the UK. Results divergence on this scale tends to confirm the impression of unstable research conditions. The following table illustrates the very wide range of figures provided from various sources.

xix Adermon A and Liang C, October 2010, Piracy, Music, and Movies: A Natural Experiment. Adermon and Liang connected a decrease in internet traffic of 18 per cent in Sweden with implementation of legislation that gave rights holders the right to obtain identity details of infringing subscribers. They also claim that the drop in internet traffic led to an increase in sales of physical music by 27 per cent and digital music by 48 per cent. It is unclear though how far the increase was in fact Sweden's share of an overall increase globally in music sales over the same period.

Prevalence of piracy – estimates (UK data unless indicated)

Music	
2010 - <i>Harris Interactive/BPI Digital Music Survey</i> – 5,000 + surveyed, aged 16-54	29 per cent engaged in unauthorised music downloading. Films, TV programmes, software (non-gaming) and video games respectively were the next most popular downloads. 76 per cent of all music obtained online was unlicensed.
2010 - <i>Nielsen, The Hyper-Fragmented World of Music survey, on behalf of Midem</i> – 26,644 respondents across 53 markets	35 per cent worldwide admitted to downloading music without paying for it (potentially illegally).
2010 - <i>Music Matters/Synovate/MidemNet Global Survey of 8,500, aged 18+ in 13 countries</i>	UK – 13 per cent admitted to file sharing (not clear whether this is in response to the same question as below). USA – 15 per cent downloaded a song from the internet without paying for it. Globally – 29 per cent. China (the highest) – 68 per cent . S Korea (second highest) – 60 per cent. Spain (third highest) – 46 per cent.
2010 - <i>BPI, Digital Music Nation</i>	65 per cent of music downloads are illegal.
2011 - <i>International Federation of the Phonographic Industry report does not aggregate data but quotes the 2010 Nielsen survey</i>	23 per cent across the top five EU markets (of active internet users) admitted to downloading without paying. 45 per cent in Brazil. 44 per cent in Spain.
2009 - <i>International Federation of the Phonographic Industry report Collating studies from 16 countries over four years</i>	2010 – 29.8 million frequent users of file sharing services in the top five EU markets. 2009 - 95 per cent of music downloads are unauthorized. 2008 - over 40 billion unauthorised files shared – meaning that globally around 95 per cent of music tracks are downloaded without payment . 16 per cent of internet users in Europe regularly swap music on P2P networks (Jupiter Research).

2007 & 2009 - Brindley & Walker, <i>The Leading Question/Music Ally Speakerbox survey of 1000 music fans (aged 14-64)</i>	Overall – per month: 2007 - 22 per cent file share (potentially illegally). 2009 – 17 per cent file-share. 14-18 year olds: 2007 – 42 per cent file share. 2009 – 26 per cent file share.
2002-2008 - Sandvine <i>Intelligent Broadband Networks, Global Internet Phenomena Reports - deep packet inspection of payloads on computer networks</i>	File sharing accounted for between 40 and 60 per cent of all bandwidth.
2006 - Birgitte Andersen and Marion Frenz, <i>The Impact of Music Downloads and P2P File-Sharing on the Purchase of Music: A Study for Industry Canada, Decima Research survey, Survey of 2,100 Canadian people, quota based random sample to represent Canadian population as a whole.</i>	29 per cent download through P2P networks. 29.2 per cent rip from CDs. 20.5 per cent used friends to copy MP3s. 8.5 per cent downloaded from free sites.
Feature films/TV programmes	
2010 – Harris Interactive	14 per cent of internet users download films & TV programmes from illegal P2P services.
2008-09 - Wigin Entertainment Media Research	Watch pirate DVDs of movies: 2008 – 29 per cent 2009 – 29 per cent. File sharing unauthorised films/programmes: 2008 – 21 per cent 2009 – 21 per cent.
Games/software	
2008-09 - Wigin Entertainment Media Research	File sharing unauthorised games/software: 2008 – 14 per cent. 2009 – 16 per cent.
2008 - Nielsen, <i>Video Gamers in Europe, Piracy and Digital Downloading for the Interactive Software Federation of Europe, Survey of 6,000 active gamers</i>	Europe: 2007 – 40 per cent owned at least one pirate/copied game. 2008 – 35 per cent owned at least one pirate/copied game (14 per cent in UK).
Business Software	
2008-09 - British Software Alliance & International Data Corporation	27 per cent of software installed in the UK in that year was illegal.

Books	
Jan 2010 - <i>Attibutor (anti-piracy business)</i>	10 per cent of the total United States book sales were pirated.
Unauthorised Content Generally	
April 2011- <i>eBizMBA Rank Fifteen Most Popular Torrent Websites</i>	Over 45 million estimated unique monthly visitors worldwide on 15 most popular sites.
Jan 2011 - <i>USA, MarkMonitor, Traffic Report: Online pirating and counterfeiting</i>	10 media brands in study yielded 43 sites classified as digital piracy & traffic generated by these sites was over 146 million visits per day or 53 billion per year.
2010 - <i>Tera Consultants/Business Action to Stop Counterfeiting and Piracy</i>	778 million digital piracy copyright infringements per year.
2008-09 – <i>IPOQUE</i>	34 to 70 per cent of global internet traffic taken up with file sharing depending on region.
2008 - <i>Forrester Research survey of 1,176 consumers</i>	11.6 per cent of respondents admitted to engaging in illegal file sharing. Scaled up to 16.3 per cent because of under reporting concern. This equates to 6.7 million people.

8.12 Meanwhile individual businesses and artists are in no doubt that piracy is doing grave damage to their interests.

“...the last album I released was illegally downloaded at least 50,000 times in the first week following release. During this time, combined sales of CDs and paid album downloads were less than 0.1% of that amount...” *Alastair Nicholson (owner of Son Records record label) submission*

“This site has ‘lifted’ my pictures with full caption and copyright notice and used them in a high resolution format. Thus enabling other ‘Bloggers’ to subsequently follow suit. ...since the shoot in 2009 I have contacted several websites asking for their removal. With mixed results. Indeed some web sites have accused me of preventing them from freedom of expression and threatened legal action. As a result of these breaches I have lost income and the trust of my clients.” *Wayne Starr (photographer) submission*

8.13 If the nature of this data on piracy makes it difficult to draw conclusions about its overall scale, it also makes it impossible to deduce reliably the balance between different sorts of unlawful file sharing.⁶

The Impact of Piracy

8.14 There are potentially two distinct, though linked, impacts of copyright piracy: an effect on the UK’s economic growth, particularly within the creative industries sector, and an effect on the incentives for the creation of new works.

8.15 The uncertain and disputed nature of the prevalence data makes it difficult to reach confident conclusions about the impact of copyright piracy on growth. This assessment is complicated further by a number of other relevant points:

- not all illegal downloads are lost sales – the user may not have paid a higher price for a legal copy absent cheap or free illegal versions;
- money not spent on legal copies is not lost to the economy – it may be spent on other purchases. This is of no comfort to the sector suffering losses, but the effects across the economy will not necessarily be problematic;
- even within the industry affected, purchases prompted by experience from an illegal copy (for example, concert tickets or other merchandise) can offset losses;
- in business software, piracy has promoted the lock-in effect for the legal provider's software and helped to make that software the global standard.^{xx}

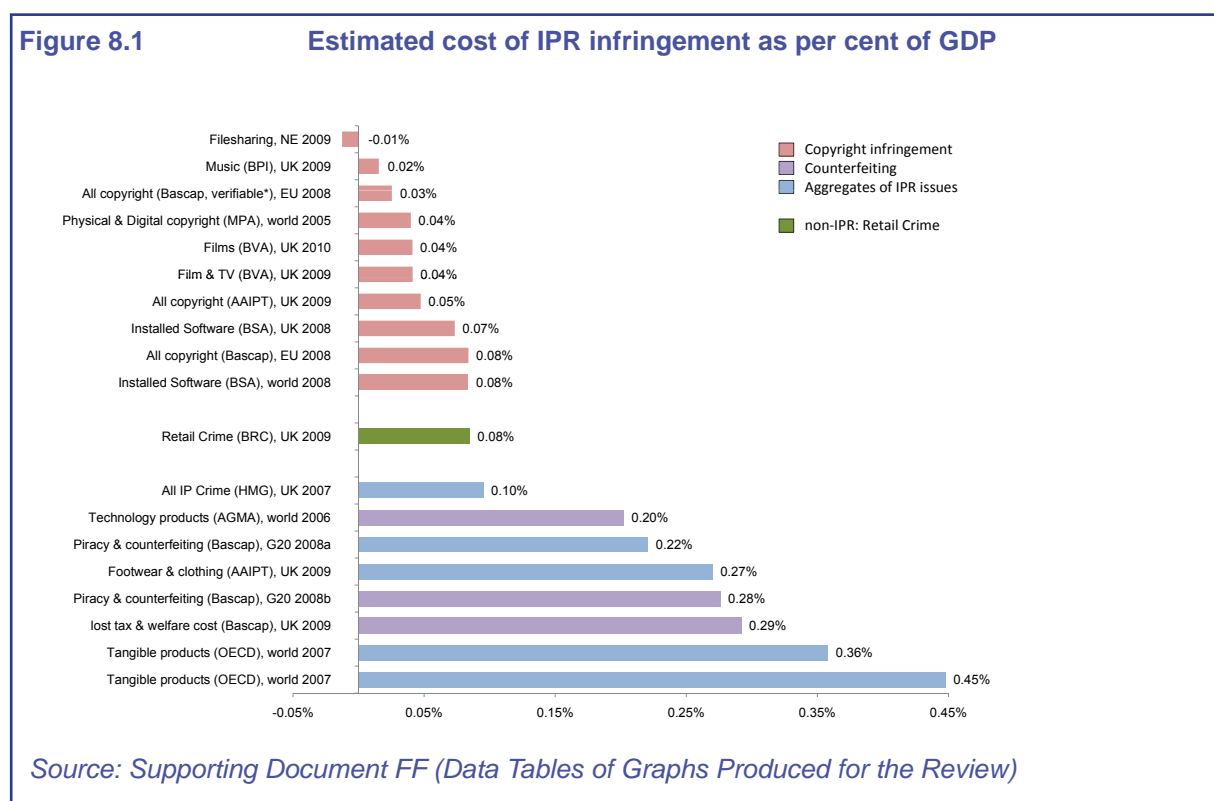
8.16 The Review team has examined numerous studies, including those in the table above, and a supporting paper looks at the methodological strengths and weaknesses of this work. With the exception of the Industry Canada study, we have either not been able to examine the methodology of the studies or, where we have, we have discovered problems with the methodology. Consequently, we have not found either a figure for the prevalence and impact of piracy worldwide or for the UK in which we can place our confidence.⁷ Published estimates of piracy and infringement have also been questioned by the US Government Accountability Office:

“According to experts we spoke with and literature we reviewed, estimating the economic impact of IP infringements is extremely difficult, and assumptions must be used due to the absence of data. Assumptions, such as the rate at which consumers would substitute counterfeit goods for legitimate products, can have enormous impacts on the resulting estimates and heighten the importance of transparency.....Most experts we spoke with and the literature we reviewed observed that despite significant efforts, it is difficult, if not impossible, to quantify the net effect of counterfeiting and piracy on the economy as a whole.”⁸

8.17 In an attempt to sketch out a “worst case” assessment of the cost of copyright infringement to the economy, we have taken a number of estimates of the level of infringement cited by the business sectors affected and expressed the cost of this estimated infringement as a percentage of the relevant territory's economy for the relevant year. The results are set out in the illustration below (Figure 8.1). On these numbers, copyright infringement appears to account for just under 0.1 per cent of economic activity, whether this concerns the UK, the EU or the whole world. The total cost of IP crime amounts to between 0.1 per cent and 0.5 per cent of economic activity. This suggests that the cost of IPR infringement is neither negligible nor overwhelming in *economic* scale, even if we work from industry's own estimates of the problem.

xx US Social Science Research Council, 2011, *Media Piracy in Emerging Economies*, p52-53: “Piracy, in effect, has allowed the major vendors to dominate low-and middle-income markets that they have little financial incentive to serve. piracy acts as a barrier to entry for competition, especially “free” open-source alternatives that have no upfront licensing costs. When these emerging markets begin to grow, as most did in the last decade, piracy ensures they do so along paths shaped by the powerful network and lock-in effects associated with the market leaders As Microsoft executive Jeff Raikes observed: “In the long run the fundamental asset is the installed base of people who are using our products. What you hope to do over time is convert them to licensing the software” (Mondok 2007).

8.18 There are other questions to which we would like answers: how bad is piracy in the UK compared with other countries? A number of surveys, including the 2010 Music Matters/Synovate/MidemNet Global Survey, suggest that the UK has comparatively low levels: with illegal file-sharing perhaps below 15 per cent, compared with China, where some estimates suggest a figure approaching 70 per cent. What about the trend? Is online copyright infringement getting better or worse? We simply don't know with any precision.

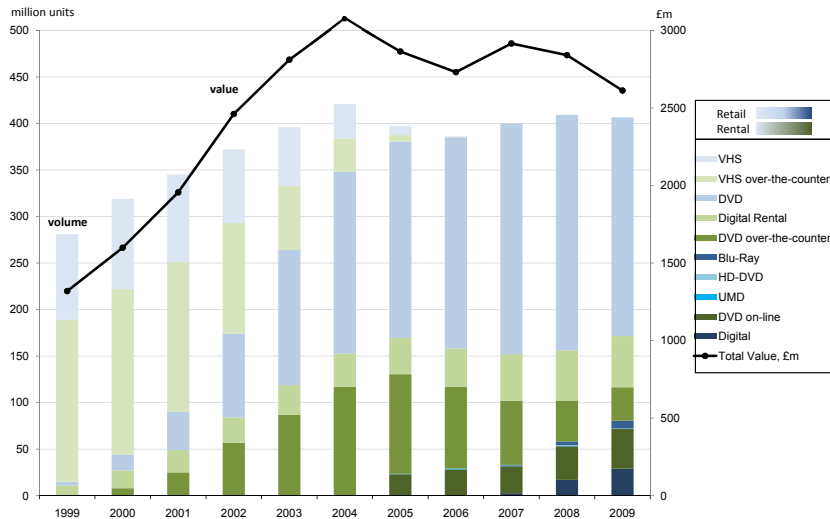


8.19 Another way of looking at economic impact of copyright infringement is to calculate it with regard to the creative industries, rather than to the whole economy, in order to assess the sectoral point of view. A study conducted for *Business Action to Stop Counterfeiting and Piracy (BASCAP)* puts a value on losses from piracy equivalent to 1.24 per cent of the contribution that the core copyright industries make to the UK economy.⁹ We have examined this frequently cited study and found a number of methodological limitations, which together indicate likely overstatement of the extent and impact of piracy.¹⁰ This suggests that the 1.24 per cent figure is also at the upper end of probability.

8.20 Where else can we look for evidence of the damage done by piracy and the current enforcement regime? Creative industry sales figures provide a clue. In the UK music industry, though some individual businesses have suffered dramatically from the boom in digital downloads (HMV, the music retailer is an example) music industry revenues overall have continued to grow year on year: to £3.9 billion in 2009, up five per cent on 2008, driven by strong figures from live music, growth in international licensing and some stabilisation in the recorded music market.¹¹ In the much bigger publishing market, figures from the Publishers Association, show that book sales have also grown or maintained their net value between 2004 and 2009.¹² The video sector too has managed to maintain unit sales, but struggled somewhat to sustain value in the last two to three years. All of this in spite of recession in Europe and North America.

Figure 8.2

UK video industry



Source: British Video Association

The Impact on the Incentives to Create Works

8.21 Copyright supports economic growth through incentivising creation of new works. How does piracy affect this incentive function? Here, US research¹³ suggests that while file sharing may have displaced music sales, it has not weakened the incentive to create new works. Other research¹⁴ found no evidence that changes since the launch of the original Napster file sharing site in 1999/2000 have affected the quantity of new recorded music or artists coming to market.

8.22 However some of the responses to the *Call for Evidence* reported some indications of weakened of incentives to invest in creation.

The BPI estimates that British record companies invest around £370m in A&R and marketing and promotion every year - approximately 10% of the global total. A significant decline in sales has a very profound effect on new talent development – in other words, it is reducing record companies’ ability to fund new artists and invest in careers... Across five years for which data is available... the total number of breakthrough acts in the UK was the lowest in 2010, with only 17 British acts reaching the 100,000 sales threshold for the first time. This follows two consecutive years where the total was much higher at 26 each year... The BPI collects data on A&R investment and has found that spend has fallen in each of the past three years for which data is available; from more than £250m in 2006 to £201m in 2009 - a decline of 20% over four years.- *BPI submission*

“The greatest barrier to growth in the creative industries is copyright infringement on the Internet ... deterring investment in new content.” *Motion Picture Association submission*

“Spain, historically one of the strongest export markets for films, provides a sobering example... whereas producers used to count on Spanish distributors’ minimum guarantee financing to cover up to 10% of a proposed film budget, advance distribution commitments today are rarely above 3-5% at best. This is the direct reaction to rampant online piracy...” *Independent Film & Television Alliance submission*

8.23 What conclusions can we draw from these wildly differing perspectives? Certainly that many creative businesses are experiencing turbulence, which translates into fears about the further, future impact of copyright infringement on sales, profitability and sources of investment. However, at the level of the whole economy or even at the level of whole creative business sectors, the measured impacts to date are not as stark as is sometimes suggested by the language used to describe them. That said, copyright infringement is a stubborn fact of the digital landscape which might well get worse and which justifies serious government effort in identifying the right mix of measures to address it.

Approaches to Tackling Digital Piracy

8.24 Many rights holders have called for stronger enforcement and other measures to secure compliance with rights. The Alliance Against IP Theft suggested a number of changes which are fairly representative of those put to the Review by other rights holders, and these can be categorised into calls for:

- implementing the DEA in full, including its substantial measures to combat online infringement (see paragraph 8.26 below);
- a levelling up of penalties, such as increasing the maximum penalty for digital copyright infringement to match that available for physical copyright infringement;
- increasing the use and level of damages to act as a deterrent;^{xxi}
- increasing financial incentives for investigators and prosecutors (for example, by raising the allocated percentage of Proceeds Of Crime Awards);
- taking forward educational awareness measures, including those proposed in the DEA;^{xxii}
- working with ISPs as gatekeepers to the internet to ensure legitimate businesses do not suffer at the hands of illegal services;
- coordinating action across relevant Government departments and agencies responsible for enforcement, possibly coordinated by a new “IP Czar”;
- establishing a dedicated online crime unit with investigatory and operational powers.^{xxiii}

xxi The current law already allows courts to award greater damages than merely the cost of the unpaid licence. It states that the court may have regard to all the circumstances and, in particular, to the flagrancy of the infringement and any benefit accruing to the defendant in awarding additional damages.

xxii Educational notifications sent to consumers who may not know that they are infringing or may not know that their internet connection is being used by others to infringe. The letters will point out that the infringement appears to have occurred but will also direct the consumer towards sites with legal content and advise on how they can stop others from using their connection to infringe (for example stopping their wireless connection from being ‘hijacked’).

xxiii UK enforcers already have investigatory powers under the Regulation of Investigatory Powers Act 2000. The Enforcement Hub within the IPO acts as an information-gathering and sharing body to support public and private investigations. The Hub runs the IP Crime Intelligence Database but it is not a dedicated solely to online crime.

8.25 The Alliance adds: “Whilst the UK is considered to be the best IP framework in the world for protecting, exploiting and enforcing IP,¹⁵ this review provides an excellent opportunity to suggest improvements to ensure its future success.”

8.26 The most substantive items in the Alliance’s list relate to the implementation of measures set out in the DEA, which provides for a substantial increase in enforcement action against those suspected of breaching copyright online. This includes graduated measures against infringers, starting with warning letters. If these are not effective there are reserve powers to slow or suspend temporarily internet connections and to block sites offering infringing content. These are the type of measures already in place or under consideration in a number of other countries around the world, including France.

8.27 Submissions to the Review reflected significant differences between rights holders and ISPs. Two telecommunications companies, BT and TalkTalk, challenged the legality of the DEA through the courts, but their arguments were almost entirely dismissed in a ruling in April 2011. Rights holders have also asked providers of search engines to block pirate services, which the latter advise they cannot do because of the difficulties in isolating illegal content from legal content, and to modify search criteria to ensure that sites selling copyright material lawfully are displayed more prominently than those which routinely infringe copyright. At the time of drafting Ofcom is finalising advice to the Secretary of State for Culture, Media and Sport on the feasibility of blocking infringing sites.

What Impact Might Stronger Enforcement Measures Have?

8.28 Although online infringement of copyright and the measures used to combat it are well established phenomena, there is relatively little research evaluating the impact of specific approaches. A recent exception is a 400 page study by the US Social Science Research Council (SSRC)¹⁶ which reviews available evidence on what works and what does not in relation to addressing what they term “media piracy” (the term covers the making of both physical and non-physical copies).

8.29 The project looked at music, film and software piracy in emerging economies and at international and local enforcement efforts to address it. Despite the report’s focus on piracy in emerging economies (which it sees as a major threat to the interests of copyright owners in the most advanced economies) it also pulls together empirical evidence on enforcement in the developed world, including in the US.

8.30 The report argues that investment to date in stronger enforcement has not significantly reduced piracy. For example, it suggests that since the era of the free and illegal file sharing operation of Napster in 1999, when P2P sharing first took off, rights holders have brought legal actions against many P2P sites and have generally succeeded in shutting them down. But this is a short term effect. Looking at the approximately 27,000 Recording Industry of America Association (RIAA) legal cases brought against P2P users between 2003 and 2008, a Pew Internet and American Life Project survey, conducted just after the first RIAA announcement, showed a 50 per cent drop in the percentage of users acknowledging use of P2P services, from 29 per cent to 14 per cent. However, by 2005 this number had reverted to 24 per cent.

“Despite the stream of lawsuits and site closures, we see no evidence – and indeed very few claims – that these efforts have had any measurable impact on online piracy. The costs and technical requirements of running a torrent tracker or indexing site are modest, and new sites have quickly emerged to replace old ones.” SSRC¹⁷

8.31 Evidence exists from countries which have already brought in similar measures to those in the DEA, notably France and South Korea, both cited by interested parties. There are conflicting opinions about what recent surveys tell us about attitudes towards the French Hadopi¹⁸ law and compliance with it.¹⁹ Our reading of the research is that it does not provide clear evidence either way. The law is still only a year old but a key finding was that half of the web users surveyed who admitted illegal use said that they did not plan to change their behaviour and a third said that they would (around a quarter of the whole sample did not respond to this question).

8.32 The South Korean experience was also quoted by some stakeholders as an example of the success of stricter enforcement. However, a report for PRS for Music,²⁰ while noting that music revenues had grown and the volume of music and film piracy had appeared to have fallen, said that the apparent improvement was from a low base and that piracy remains a serious problem.

“Korea’s success has been in making piracy somewhat less mainstream – it is less socially acceptable than it was, and illegal material is less likely to be readily available on those otherwise legitimate sites...absolute levels of piracy remain extremely high by international standards. It is possible that in time piracy will increasingly rely on offshore servers or distributed peer-to-peer, which will be harder to control, both from a technical and enforcement perspective.”²¹

8.33 South Korea also introduced a wide range of measures to tackle piracy, not only stricter enforcement but also incentives not to host illegal content, educational campaigns and rights holders working with pirates. Further study would be needed to understand the relative merits of the different aspects of the programme.²²

The Role of Education

8.34 A number of submissions to the Review called for additional efforts to educate people, especially the young, in the importance of copyright and the way it works. The evidence we have seen suggests that there is a role for education, though this evidence does not indicate that it is likely to make a decisive impact in the absence of other actions.

8.35 The British Video Association, in its submission, cites research for the Industry Trust for IP Awareness by NOP/GfK in 2009. The survey found that the Trust’s awareness campaigns achieved a 69 per cent agreement among people who had seen their advertising (compared to 53 per cent among those who had not) with the statement that “unauthorised downloading pirate/knock off films or TV programmes is a form of theft” and 50 per cent agreed that it was socially unacceptable behaviour.

8.36 The American SSRC study, involving quantitative and qualitative research, found a consistent set of attitudes on piracy:

- that piracy is often regarded with ambivalence by consumers;
- that pragmatic issues of price and availability usually override moral considerations;
- that consumers know what they are buying (though this is in relation to physical DVDs/CDs bought from street vendors not online piracy).

8.37 By looking at the various levels of piracy in different countries, they concluded that educating students or other consumers about piracy made no discernible difference to their behaviour. They noted the very large numbers of educational campaigns but observed that piracy levels, particularly in emerging economies, appeared to remain high and that consumer attitudes remained ambivalent to piracy. They believe this correlates with the many other surveys on the subject, including the BPI's and the comprehensive BASCAP *Research Report on Consumer Attitudes and Perceptions on Counterfeiting and Piracy* in 2009. BASCAP found that: "most consumers reported caring about their society and community, but this rarely prevented them from engaging in counterfeiting or piracy."

8.38 However, the SSRC also draw attention to the absence of benchmarking and quality evaluation of education campaigns, despite their profusion. BASCAP identified 333 such campaigns in developed countries alone over 10 years. They examined 202 campaigns but there appeared to be no evaluation of their success or the lessons learned from any of them.

8.39 This is the threadbare research background against which policy-makers are currently working. Ofcom, as it prepares to advise Government about measures to combat online piracy, has concluded that well-monitored educational measures can be effective as part of a wider strategy which also includes enforcement and readily available legitimate digital services to consumers.

Changing Business Models

8.40 Where enforcement and education alone have so far struggled to make an impact on levels of copyright infringement, there has been more evidence of success where creative businesses have responded to illegal services by making available lower priced legal products in a form consumers want. Ofcom's work also indicates that where a legal offering is readily available at the right price, incentives to circumvent enforcement measures, such as site blocking, are reduced.

8.41 Harris Interactive for the BPI's Digital Music Nation report in 2010 asked why respondents had stopped using P2P. Twenty nine per cent said that it was because a better pay service was available^{xxiv} Today, there are many examples of UK companies successfully responding to the opportunities presented by the demand for innovative digital services:

- Pearson's submission cites the Financial Times' success in developing a new global business model based on the concepts of conditional free use (illustrated by the metered model and database licences), multiple digital platform access and direct to customer licences that reduce licensing costs for media intermediaries.
- Spotify, an online music streaming service offering a combination of free and subscription based access to music, illustrates the consumer demand for lawful online music services.
- The film industry is experimenting with shortening the windows for release of films on DVD; providers like Lovefilm in the UK are increasingly adding new online streaming options to their established services.
- The computer games industry is using monthly subscription packages to develop direct relationships with consumers to reduce piracy and making available innovative variations on the "freemium" model.²³

8.42 Some rights holders have said that they "cannot compete with free". If, as research indicates is likely, even a stronger wave of enforcement may well fail to inflict a decisive reversal on the pirates, competing with free will be an ongoing feature of the digital business challenge. Moreover digital markets are global markets and even if intensified enforcement were significantly to change behaviour in the UK that change would probably not be mirrored elsewhere, particularly in the growing markets of India and China or in difficult jurisdictions like Russia, a point made in the SSRC study.

8.43 This is not a counsel of despair but a recognition that what rights holders face is a particular form of a challenge shared by many businesses, namely how to construct a distinctive product offering that consumers are willing to pay for. There is research²⁴ suggesting a willingness to pay significantly more than zero for a CD, albeit not the current full market price, even when illegal copies of the same thing were available for no charge. Brindley and Walker (2009) conducted a survey in the UK of teenagers that showed increased use of licensed streaming services is displacing file sharing as a way of accessing music.²⁵ This means that it is all the more important that licensing is made as simple as possible so that new offerings can come to market as soon as possible (as described in Chapter 4).

xxiv 24 per cent said it was not fair to artists and songwriters, 23 per cent use free streaming service instead, 21 per cent use social networks for music, 16 per cent use forums and blogs, 13 per cent have downloaded most of what they want, 12 per cent were worried they would get caught, 12 per cent said it was wrong to use unauthorised source.

The Way Forward

8.44 Governments around the world are acting in response to pressure from rights holders, for wholly understandable reasons. Given the relatively new and fast changing nature of the supply of online digital content services, it would be unreasonable to expect settled clarity in consumer behaviour or the kind of sustained patterns of behaviour that researchers find it easiest to track. In terms of enforcement against online copyright infringement and related educational initiatives, we are still in an exploratory phase. In this period, it is essential that enforcement and educational initiatives are carefully tracked and their impacts correctly understood. If this is not done, resource will be wasted and further harm may be done to the interests of everyone concerned. There can be no excuse for failing to conduct this kind of research as the UK prepares to implement the Digital Economy Act.

8.45 The most confident conclusion we can draw from our experience of digital content markets to date is that we need a combination of enforcement, education and a big push to expand the legitimate market for digital content, through services which attract consumers of all ages and backgrounds. It will be important to ensure that enforcement measures are not designed or implemented in a way that alienates consumers and undermines work in education and extending the appeal of legitimate markets. Emphasising enforcement as an alternative to improved digital licensing and modernised copyright law is the wrong approach. Action is needed on all fronts.

8.46 The role for Government is to facilitate the provision of readily available legitimate digital content, to reshape copyright law where it is out of touch and to support this with effective measures to educate consumers and to enforce the law.

8.47 How can Government know what amounts to a reasonable level of enforcement? WIPO, after looking at research including OECD data, concluded:²⁶ “it is optimal for governments to devote a level of public spending on law enforcement, such that the marginal benefit of fighting IPR violations equals the marginal cost of enforcement activity. The marginal benefit includes the welfare effects..... the marginal cost includes the opportunity cost of not using scarce fiscal resources to provide other public goods. Public spending on law enforcement will affect the probability of apprehension and the penalties faced by suppliers, distributors and (knowing) consumers of IPR infringing goods, leading to adjustments in the market for offenses until equilibrium is reached.”

8.48 At this moment, given our state of knowledge, no-one in the UK could make an informed assessment of what is the right level of resource for online enforcement in the UK. We can only guess and get on with it, using rigorous evaluation to develop the kind of cost-benefit framework described by WIPO.

Counterfeiting

8.49 Counterfeit goods infringe trade marks, and insofar as they deprive brand owners of sales, they may erode the incentive to build and protect brands.

8.50 We know that counterfeiting, like online piracy, is widespread. An IPO survey in 2009 found that 90 per cent of Trading Standards Authorities had dealt with such cases, most commonly designer goods, followed by DVDs and CDs.

“Total UK spend, just on clothing & footwear fakes per annum: £3.009 billion”
“The UK is one of the largest consumer markets for fakes per capita in the world.” *Anti-Counterfeiting Group and British Brands Group submission quoting uncited consumer survey.*

8.51 As with online piracy, estimating the extent of counterfeiting is problematic and sources and methodology for much research are not open to scrutiny.²⁷ A frequently cited statistic is the OECD’s estimate that counterfeit and pirated goods in international trade could have accounted for up to \$200 billion in 2005, later updated to \$250 billion based on 2005-07 world trade data.^{xxv} The OECD qualified this by saying that it was based on data from national Governments and relevant industries and had not been independently assessed. It concluded that, “the overall degree to which products are being counterfeited and pirated is unknown and there do not appear to be any methodologies that could be employed to develop an acceptable overall estimate.”²⁸

8.52 Counterfeiting may adversely affect growth since trade marks are associated with growth. Research has suggested that investment in brands constituted approximately six per cent of total tangible and intangible investment in the UK economy in 2006,²⁹ and that firms which trade mark have significantly higher value added than non-trade mark companies.³⁰ The association of brands and business growth is particularly clear in the branded fast moving consumer goods sector.³¹

8.53 There is also a consumer protection aspect to tackling counterfeiting, in situations where consumers are being misled. This is not always the case, however, depending on the nature of the product: for example, few people believe they are buying a genuine Gucci handbag when they pay a few pounds in a street market.³²

8.54 Some of those who provided submissions drew attention to the losses to the exchequer, links to organised crime, health and safety consequences and other adverse effects of counterfeits. In an IP context these are very much secondary arguments, though there can certainly be value in ensuring that criminal enforcement agencies are suitably “joined up.” There are, however, good stand-alone IP arguments for the enforcement of IP law, and care needs to be taken not to confuse either the objectives or the means of tackling problems in very different areas, such as safety and counter-terrorism.

xxv Excluding digital piracy or counterfeit goods produced and consumed within the same country.

8.55 It is striking that the debate around counterfeiting – a very longstanding problem – provides such strong echoes of the debate about online copyright piracy, which is a fairly new problem. In both cases, there is a chronic lack of reliable background data; very little useful research to support the design of enforcement programmes and much grumbling about the role of Government and its enforcement agencies. The submission from the CBI drew attention to variations in the application of the existing enforcement regime.³³

8.56 In recent years, the UK authorities and affected industries have made greater efforts to co-ordinate their approach to IP crime. In its 2004 IP Crime Strategy (about to be updated), the IPO identified the need for such an approach. As a result an Enforcement Hub was developed within the IPO to act as an information gathering and sharing body to support public and private investigations (where infringement is wilful, copyright and trade mark offences are criminal). The Hub runs the IP Crime Intelligence Database and an IP Crime Group brings together Government, industry and enforcement agencies.

8.57 These have proved to be useful initiatives, but they are still quite young. Progress has been made in coordinating the different parties but the group has not yet tackled the crucial issue of metrics and methodology for collecting information about the scale and nature of counterfeiting in different industries. The IPO is developing a more evidence-based approach to all of its work, but it has not yet done significant work on the links between counterfeiting and innovation. As trade marks become increasingly valuable in the economy, these are gaps of growing importance.

8.58 The strengthened IPO the Review envisages (Chapter 10) should be equal to this larger and demanding leadership role.

Cost of Dispute Resolution and Access to Justice

“Costs can be prohibitive, particularly for small firms. A firm challenging a patent can expect to pay £750,000 for a simple case, largely due to the costs of the adversarial system.” *Gowers Review of Intellectual Property, 2006*

“...even a £2,000 claim for copyright infringement (eg the current case in the PCC about one architect copying another’s plan) can run up costs of £20-£30k which dissuades people from enforcing IP at low levels.” *Nokia submission*

8.59 For all IPRs, ultimate resolution of disputes over alleged infringement of rights lies in the courts.^{xxvi} Businesses seeking to enforce rights or defend themselves from allegations of infringement therefore have to contend with the costs of litigation.

8.60 For micro businesses and SMEs in particular, these costs – which are not simply the money cost of legal fees, but also the diversion of time and attention – can be considerable. The situation is exacerbated by the relative weaknesses of a smaller business’s negotiating position (lacking, for

xxvi Although the IPO has jurisdiction to hear patent infringement cases, this is limited in that both parties must consent, and the IPO has no power to issue injunctions, only award damages. The jurisdiction has never been used.

instance, large patent portfolios or frequent dealings with other businesses) compared to a large firm with which the smaller enterprise may be in contention. This can result in smaller businesses being less able to obtain a favourable settlement short of court action.³⁴

8.61 Evidence suggests that smaller businesses who have their “day in court” are not relatively disadvantaged³⁵ but the question then remains as to whether smaller businesses are more likely to be forced into unfavourable earlier settlement. Submissions to the Review highlighted many examples of smaller businesses saying they were unable to enforce their rights.³⁶ One high technology small business told the Review:³⁷ “it’s often easier to pay licensing fees on a patent that may be invalid than to dispute or challenge the patent.”^{xxvii} It is noticeable that fewer SMEs are litigating IPRs in England and Wales than in some other EU countries.³⁸

The Patents County Court

8.62 The Government has recently taken steps to address access to lower cost IP litigation with reforms to the Patents County Court (PCC). (Despite its name, the PCC deals with trade mark, design, and copyright cases as well as patents). These follow recommendations from the Jackson Review of Civil Litigation,³⁹ and involve streamlined procedures, a fixed scale of recoverable costs capped at £50,000 and a damages cap of £500,000. The costs cap in particular is designed to provide certainty to SMEs worried about a large costs award against them should they lose against a well funded opponent. Streamlined procedures aim to keep all costs down.

8.63 Although some submissions to the Review express scepticism as to whether the PCC reforms will benefit SMEs as intended,⁴⁰ there is a strong case for seeing how these reforms work in practice – they are still being implemented – before considering further changes.

8.64 However, one issue not currently addressed by these reforms, but which both the Jackson Review and submissions to this review have advocated is a “small claims” track for low value IP claims. These are cases where the claimant is sometimes more concerned with discouraging future infringement than with the monetary value of the present claim.

8.65 Evidence submitted to the Review demonstrates a low level of awareness of the existence of the PCC among SMEs. This situation is probably not helped by its name – indeed the Jackson Review suggested a renaming to the Intellectual Property County Court, a suggestion this review supports – but more generally is symptomatic of a general lack of awareness of options for dispute resolution, and indeed about IP in general among SMEs. This issue is addressed in Chapter 9.

xxvii 15 per cent of participants in that meeting claimed to have had difficulties defending a claim against them which they felt unjustified; 45 per cent had not.

Recommendation: Enforcement of IP rights.

The Government should pursue an integrated approach based upon enforcement, education and, crucially, measures to strengthen and grow legitimate markets in copyright and other IP protected fields. When the enforcement regime set out in the DEA becomes operational next year its impact should be carefully monitored and compared with experience in other countries, in order to provide the insight needed to adjust enforcement mechanisms as market conditions evolve. This is urgent and Ofcom should not wait until then to establish its benchmarks and begin building data on trends. In order to support rights holders in enforcing their rights the Government should introduce a small claims track for low monetary value IP claims in the Patents County Court.

Chapter 9

SMEs and the IP Framework

9.1 Young and innovative firms are crucial to the UK's economic prospects. This review has sought to identify in every aspect of its work opportunities to improve the way the IP framework operates for the benefit of SMEs. These include:

- The need for a single European patent and patent court (Chapter 3)
- Greater certainty and ease of access in licensing copyright (Chapter 4)
- A clearer regime of copyright exceptions (Chapter 5)
- Steps to ensure patent thickets do not hamper SME innovation (Chapter 6)
- A better rights framework for the design sector (Chapter 7)
- An approach to rights enforcement which fully recognises the needs of smaller companies (Chapter 8)

9.2 We have made recommendations in relation to all of these. To them we add gaps in IP knowledge among SMEs and gaps in IP services available to them, which are explored in this chapter. The ability of young and innovative UK firms to realise the potential value of IP is impeded by these shortcomings, and this matters increasingly because of the growing importance of smaller IP intensive firms to future growth.¹ For such firms, IP is a significant enabler of their business.

"IP is a hygiene factor until it's a company killer." *Chris Swan, Capital SCF, January 2011*

9.3 However, even for creative or technical companies, IP is only one relevant factor and rarely the most important in the way they view their prospects. A number of responses to the *Call for Evidence* took the opportunity to highlight the many other issues SMEs face, such as investor appetite for risk, bankruptcy rules, availability of skills and the array of regulations with which all companies contend.

SME Access to IP Services

9.4 The Review's Terms of Reference mandated us to consider the cost and complexity to SMEs of accessing IP services to help them protect and exploit their IP. We recognise that the term "IP services" potentially encompasses a broad range of activity, but we are primarily concerned here with

the provision offered by rights granting offices, such as the IPO, legal intermediaries and services that claim to offer assistance in maximising value from IP, such as invention promoters and IP consultants.

9.5 To help evaluate the accessibility of such services to SMEs, the Review drew on existing evidence, responses to the *Call for Evidence* and also commissioned a Survey of SMEs.² We found that current service provision is not configured as well as it could be to help SMEs understand and protect their IP or realise value from it. There are three main issues which serve to impede SMEs in obtaining the support they need: the complexity of available offerings; a lack of broad based, *strategic* business advice; and the substantial costs involved in IP management.

Complexity of Service Provision

9.6 There exists a plethora of organisations providing advice and information in relation to IP. Such services range from Government backed bodies to independent, commercial and non-commercial institutions, as well as those that specialise in particular areas such as valorisation or combating counterfeiting. On the face of it, the marketplace looks diverse, but the survey suggests that, from the point of view of smaller companies, this is not resulting in clear product offers and competitive pricing. Evidence gathered by the Review from a wide range of sources suggests that the extent of information available on IP can actually act as a significant barrier to SMEs, particularly to start ups.³

One quarter (27 per cent) of surveyed SMEs agreed that “*there are too many services available – it’s difficult to choose the right one.*”⁴

9.7 Patent and trade mark attorneys are regulated by the Intellectual Property Regulation Board (IPReg) set up under the Legal Services Act 2007, but other service provision is essentially unregulated. Less reputable providers are able to win business. The Review heard a number of anecdotal accounts involving SMEs who had initially received poor advice and subsequently faced even higher costs in damage limitation. Following complaints about disreputable invention promotion companies, the IPO has worked with the British Standards Institution (BSI) to introduce a British Standard for provision of commercial IP services.⁵

Two fifths (38 per cent) of surveyed SMEs agreed that “*you cannot tell which services are reliable or trustworthy.*”⁶

Strategic Business Advice on IP

9.8 What SMEs say they want is an integrated source of advice which combines commercial and technical insight with legal expertise, helping them to commercialise, as well as protect, their IP.

Two thirds (66 per cent) of surveyed SMEs indicated that they would be interested in having access to an intermediary who can provide basic advice on IPR (applications, maintenance, licensing, disputes or enforcement) in place of a legal advisor or attorney – with interest even higher amongst the smallest firms who had started trading recently.⁷

Around nine in ten of the small technology firms which the Review met at TechHub expressed interest in this, with around three fifths saying they would be very interested.⁸

9.9 At present, long established IP legal advisors (for example, patent attorneys) seldom offer expertise on the commercial aspects of IP.^{xxviii} Conversely, IP advisors with a business focus lack the detailed legal knowledge to assist SMEs in obtaining IPRs. When, as part of the public consultation phase of our work, the Review sought the views of young technology SMEs in a meeting at TechHub, we were told that what they required was one stop shop provision for IP management and commercialisation.⁹ There is some evidence that some such services are beginning to be considered,¹⁰ but this type of provision is still in its infancy.

9.10 This lack of integration is particularly significant when we consider that research commissioned by the Review into the financial constraints experienced by small businesses revealed that only around one quarter of intangibles-intensive SMEs wrote down an IP strategy and a similarly small proportion explicitly aligned their IP strategy with their business plan.¹¹ These findings are important because interviews with investors as part of the same research indicated that SMEs' ability to present a strong business plan (incorporating intangibles and IP) was a key factor in their decisions on whether to offer financial assistance. The Review has also seen evidence that some creative firms, especially in the music industry, experience considerable difficulty in accessing finance.¹²

Around three fifths (62 per cent) of surveyed SMEs indicated that they would be interested in access to better general advice for start up businesses (including advice on using IPR).¹³

Costs of IP Management

9.11 The Review has heard on many occasions and from a wide range of sources that the costs of IP management to SMEs are felt by many to be prohibitively high – both in terms of registering and maintaining IPR, but also in conducting (or entertaining the risk of being involved in) disputes.

“Members in the field of intellectual property and patents (this includes lawyers as well as inventors/business people with an idea and product they wish to protect) noted that the biggest problem for SMEs concerning IP is the cost of obtaining registerable IP rights.” *Federation of Small Businesses*

9.12 The Review therefore asked firms to estimate their true costs of obtaining registered IPRs. The average cost to an SME of applying for, maintaining and protecting a patent, was reported to be £20,700; the equivalent figure for a trade mark or design is £4,800.¹⁴ The mean fee paid for external advice on applying for, maintaining and protecting a patent was estimated to be £13,800; the comparable figure for a trade mark or design was £6,300.^{xxix}

xxviii There are some independent legal professionals who also help firms maximise value from their IP through, for example, licensing (for example, some members of the Licensing Executives Society).

xxix External advice primarily refers to attorneys.

9.13 Among surveyed SMEs who had withdrawn, or considered but not launched, an application for registered rights, cost was given as the reason by three in ten (28 per cent). That the costs of obtaining or maintaining IP protection are a significant issue is also acknowledged by practitioners. In its submission to the *Call for Evidence*, the Chartered Institute of Patent Attorneys notes that “many practitioners have experience of ... businesses not being able to continue with [patent] protection because of shortage of funding ... this has been reported as a particular issue for smaller biotechnology/pharma type companies, where revenues from products may be substantially later than in other technology fields and the costs can be very high.” There is a particular problem with costs of enforcement, which has been considered in Chapter 8.

“If you spend all your time looking over your shoulder [worrying] about being copied, you never actually get the business running.” *Creative, 1-20 employees, start up*¹⁵

Possible Action

9.14 The picture painted by this evidence is not one which amounts to a crisis, but there is clear scope for improvement. During the course of the Review we have heard a number of ideas as to how this might be achieved. These include:

- encouraging larger firms with IP competence to buddy smaller ones;
- action by the IPO to provide paid for advice as a commercial service, and/or to accredit lower cost providers of integrated IP business advice, following models elsewhere in the legal world, where paralegal services are offered by individuals less qualified than full scale patent attorneys;
- adjustments to the Government’s broader business support offering better to meet IP needs, including in the devolved administrations;
- overhaul of the IPO’s online engagement.

9.15 The IPO has done well regarded work, including in partnership with Aardman Animations, creators of Wallace and Gromit, reaching out to young and innovative firms, though this has been scaled back significantly because of current restrictions on Government communications activity. With general levels of awareness about IP among SMEs worryingly low, this is not a good time to be cutting back outreach activities.¹⁶

9.16 The Review also sees a connection between the institutional remit of the IPO, and the shortcomings in support for SMEs that we have found. A less constrained IPO, with a clearer mandate with regard to innovation and growth across the economy, and so driven more by what SMEs need than by what the IPO finds itself free to do, might have taken some of the steps envisaged above before now.

9.17 On a number of occasions we heard of instances where the IPO had tried to be helpful, but not actually succeeded because of unwillingness to offer advice tailored to an enquirer’s circumstances.

“People there (the IPO) have been really helpful, really, really helpful, but in a governmental way.”
*Biotech, 20-40 employees, established firm*¹⁷

9.18 The IPO undoubtedly has the potential to improve the availability of IP services to SMEs, though it will need to consider carefully the balance of benefits between direct provision from its own staff and working with a well organised network of intermediaries. To accomplish either of these things effectively and on a sustained basis will require greater clarity in the IPO’s mandate and an evolution in its culture.

Recommendation: Small firm access to IP advice.

The IPO should draw up plans to improve accessibility of the IP system to smaller companies who will benefit from it. This should involve access to lower cost providers of integrated IP legal and commercial advice.

Chapter 10

An Adaptive IP Framework

10.1 In the course of this review we have repeatedly noted how important it is for the IP framework to adapt to change, and the difficulty the UK framework has experienced in doing so. Here we explore the causes of this problem and set out some thoughts about how the system's design can be changed. The aim is to improve the IP framework's ability to focus on strategic priorities and respond to changes in technology and markets.

10.2 Copyright illustrates this inability to adapt at its most serious. Licensing markets are congested and opaque. Millions of orphan works cannot be licensed at all. There is widespread unauthorised consumption of content. Countless people are in breach of copyright in performing every day acts such as transferring music from computer to MP3 player. From undergraduate music fans and their vice chancellors to schoolteachers we have encountered perplexity about the legal status of day to day activities in education. New technologies such as text mining are regulated in unforeseen ways by copyright.

10.3 Even where IP law is clear it is too infrequently grounded in evidence or directed to take account of economic priorities. This represents a failure of public policy. We cannot say that we have an IP framework optimised for growth when investors must factor expectations of protracted copyright clearance or large scale piracy into their risk evaluations, or when the framework defies understanding. We are in danger of trying to run a modern highways system with a Highway Code last revised in Edwardian England.

10.4 Digital technology has not affected patents, or other forms of IP, to the same extent as copyright. We have noted the strain which the patents system is experiencing as numbers of patents increase, especially with regard to computer programs. Our recommendation embodies a broader recognition that a growth centred perspective requires greater weight to be given to the interests of innovators wishing to enter patent intensive fields than has been usual in a system built around the needs of established patentees. This is consistent with the direction of change we advocate on copyright. In Chapter 7, we explore briefly the unconsidered nature of the rights protection regime as it applies to design.

Adapting the IP Framework

10.5 History shows that our track record of implementing change in the UK IP framework is patchy at best. The Banks Review in the 1970s deplored the lack of evidence to support policy judgments. Thirty years later, the Gowers Review in 2006 made the same point. Our institutional framework appears to have failed to equip itself to conduct evidence-based policy effectively. As technological pressures on the copyright framework have intensified, this incapacity for organic adaptation expressed itself in a frenetic frequency of reviews: the Creative Economy Programme in 2007, the Digital Britain Review in 2008-09, and the Government's Copyright Strategy in 2009. Now this review. In spite of all this activity, many if not most of the recommendations for change remain locked in the "too difficult" file.

Gowers Recommendations on Copyright Exceptions

The Gowers Review made 54 recommendations, of which only 25 have been implemented wholly or in part.¹ In copyright, Gowers made nine recommendations aimed at allowing specific activities to be performed with a copyrighted work without the need for a licence. These included allowing libraries to make archival copies, including on new media and permission for individuals to format shift (for example, a musical-track from CD to hard drive). After two consultations the only concrete action has been the abandonment of efforts to bring in a private copying exception or an exception to cover parody. Other exceptions were not ruled out by the previous Government, but nor have they actually been taken forward.² The Gowers deadline for implementation of its findings was 2008.

10.6 Many responses to the *Call for Evidence* suggested or implied shortcomings in the institutional arrangements. These include alleged abuses of monopoly powers by collecting societies, inadequacy of regulation of copyright contracts and licensing, ineffectiveness and unfitness for purpose of the Copyright Tribunal, absence of effective arbitration arrangements to support low cost dispute resolution, and a low opinion of the Strategic Advisory Board for Intellectual Property Policy (SABIP), set up following the Gowers Review and subsequently abolished.³ Consumer Focus in particular argued in detail that copyright policy and regulation needs to be formally directed to the promotion of innovation and growth, with a stronger emphasis on supporting competition and collaboration with competition authorities. There can be no doubt that the perspective of consumers has played too small a part in the work of the UK's IP policy makers.

The Strategic Advisory Board for Intellectual Property Policy

The Gowers Review recommended the creation of an independent advisory board with its own budget for research "to provide a strategic overview of policy and to challenge Government policy-making".⁴ SABIP came into being in the spring of 2008. It oversaw a number of research projects on IP policy topics, but did not become part of the mainstream IP policy process in any area. In May 2010 an independent review found that "while SABIP was set up with the best of intentions and has generated a considerable volume of activity, it has for a variety of reasons not met the expectations of most of its stakeholders... its present relationship with the IPO is not satisfactory from any perspective. The Board complains that it has not been practically well served, the IPO seems to have derived only limited value from its work and external stakeholders find the relationship confusing and potentially duplicative".⁵ It was disbanded in the summer of 2010.

10.7 It is impossible to avoid the conclusion that there is something deeply and persistently amiss in the way that policy towards IP issues in the UK is determined and/or administered. The fact that problems are most striking in the area of copyright law needs to be taken into account: that may, in part, reflect the origins of the Intellectual Property Office, so named in 2007 following Gowers, having been the Patent Office since 1852. No one can be surprised that in the face of significant structural flaws, a decision to graft on to the IPO an independent committee with a research budget failed to resolve the difficulties.

10.8 We outline below some thoughts on how the UK's IP machinery can be strengthened to achieve better focus on the issues that matter most.

10.9 First, however, it is important to note the need for any machinery in this area of policy and public administration to be robust. This matters because there are strong and divergent interests in play and with some of the most skilful and influential lobbyists on the UK political scene.

10.10 Lobbying is a feature of all political systems and as a way of informing and organising debate it brings many benefits. In the case of IP policy and specifically copyright policy, however, there is no doubt that the persuasive powers of celebrities and important UK creative companies have distorted policy outcomes. Further distortion arises from the fact (not unique to this sector) that there is a striking asymmetry of interest between rights holders, for whom IP issues are of paramount importance, and consumers for whom they have been of passing interest only until the emergence of the internet as a focus for competing technological, economic, business and cultural concerns.

10.11 The passage of the Digital Economy Act 2010 exemplifies the environment in which copyright policy is made. Very significant parts of the Digital Economy Bill, which was introduced to Parliament towards the end of the previous Government's term, were lost or amended during its passage into law. This was partly a matter of unfortunate timing: a Government facing an imminent general election is ill placed to withstand pressures to amend legislation to get it through. The fact that the DEA's legality was subsequently contested in court by two large UK companies, BT and TalkTalk, indicates the absence of business consensus. Lord Puttnam, a major figure in the UK creative industries, commented at the time: "We have been subjected to an extraordinary degree of lobbying... The lobbying process that has gone into this Bill has been quite destructive and has done none of us very much help at all".⁶

10.12 A prominent and persistent example of the lobbying problem concerns the duration of copyright protection, which has been periodically extended in recent decades. In spite of clear evidence that this cannot be justified in terms of the core IP argument that copyright exists to provide economic incentives to creators to produce new works. As has been noted by a number of commentators,⁷ no one has yet discovered a mechanism for incentivising the deceased.

10.13 The most recent example of such extensions involved a UK decision to support a still incomplete EU process to extend the rights of owners of sound recordings from 50 years to 70 years. Such an extension was opposed by the Gowers Review and by published studies commissioned by the European Commission.⁸ A decision in favour of the change was, nonetheless, announced by the Secretary of State for Culture, Andy Burnham, in December 2008. The Government's own economic impact assessment subsequently estimated that extension would cost the UK economy up to £100m over the extended term. One justification for extension might be that Ministers wished to afford extended copyright as a mark of respect and gratitude to artists and their families – a perfectly legitimate argument, though one that ignores the fact that very often artists' rights are owned by corporations. Independent research commissioned for the Gowers Review suggested that the benefits to individual artists would be highly skewed to a relatively small number of performers.⁹

Policy Development

10.14 The IPO is the principal IP framework institution, and its CEO has statutory duties concerned with providing services in support of registered rights (i.e. patents, trade marks, and designs). It is financially self sufficient through application and renewal fees for these rights with a Trading Fund Order that essentially confines its activities to the IP field. It has no other underpinning duties or functions, and policy on IP is currently developed by civil servants working in the IPO and reporting to Government ministers. The IPO currently employs 900 people and has an annual budget of £70m.

10.15 The IPO's service delivery function is technical, subject to requirements of legal process, and delivered through decisions which apply the law and seek to achieve consistency with Government policy goals, such as promoting innovation. This activity takes place in Newport, South Wales, and directly or indirectly occupies a large majority of staff. The policy function is split between London and Newport. Although the policy work demands technical IP knowledge in some fields it does not require professional specialism of the sort required by an experienced examiner of patent rights. It does demand general policy competences such as strategic thinking, political awareness and breadth of vision.

10.16 The independent review of SABIP mentioned above found considerable improvement within the IPO since the Gowers Review, for example in building research capability. There are other signs that the IPO is moving in the right direction. The Gowers push led to the appointment of the IPO's first economist (in 2008) and this has played a significant part in focusing the IPO's attention upon the economic aspects of IP. Internationally, the IPO's reputation is good.

10.17 There is nonetheless other recent evidence¹⁰ that the IPO's culture and character is still not sufficiently outward looking and strategically focused. A management review of the IPO completed in January 2010 identified many positive features, but called for action in a number of areas, including the development of the office's strategic and corporate planning skills. It concluded that the IPO "is not a hospital case, but it does need to go the gym for a serious tone up if it is to be fit enough to handle the challenges it faces in the future."¹¹ The IPO has a major change programme underway in response. It is beyond the scope of this review to comment further on the management of the IPO, which is governed with the assistance of an advisory board recently placed under new leadership.

Here we will focus upon the legal framework within which the IPO sits and ask whether it might be beneficially adjusted, in order to enable the IPO to develop as a more effective body.

10.18 If the current Government wishes to ensure that the IPO is focused on promoting innovation and growth, subordinating other IP issues to that objective, it will be necessary to equip the IPO with an overarching legal mandate. This should state that IPO decisions will be based in evidence and take due account of the impact of the IP system on innovation and growth. The aim would be to rebalance the interests at play in the IP system so that potential new entrants and consumers are better served, along with existing rights holders. These new functions would need to comprise:

- a) A duty to keep under review the impact of IP and IPRs, and market positions founded on IPRs, on innovation and growth, including adverse impacts on competition and the competitive spur to growth, and to report annually;
- b) Powers to prepare one off reports on specific areas or cases where there appears to be detriment to competition and consumer welfare;
- c) Powers to require information to support the exercise of these reporting functions;
- d) Powers to make recommendations to the competition authorities, and to fund investigations that competition authorities may make as a result, thereby recycling income from fees paid by rights holders in the interests of maintaining healthy and efficient markets, as well as servicing the needs of rights holders and applicants.

10.19 This broadening of the IPO's vision would direct it to factors bearing on the contribution of the IP system to growth. It would also support a more forward looking outlook, identifying and understanding developments in technology and markets which might require further adaptation of the framework. To be robust in a highly contentious area like IP, these changes would need to be embodied in legislation. This could be achieved at the same time as the legislative implementation required to enact our proposals below for copyright opinions.

10.20 These functions would be exercised within a framework of public accountability, including statutory provision for Parliamentary scrutiny of reports. We would expect this accountability to sharpen the evidence gathering performance of the IPO.

Copyright Opinions

10.21 We noted in Chapter 5 that there is no obvious means to clarify the boundaries of copyright infringement in the new circumstances which digital technology creates. Nor has the IPO any means to clarify the law where it is causing misunderstanding or confusion – as it manifestly is for many people – in a way which carries formal authority, although it has equivalent functions in patents and trade marks.

10.22 The Review therefore proposes an additional statutory function for the IPO in this area:

- A power to publish formal opinions in order to clarify the application of copyright law, and specifically the application of copyright exceptions, where new circumstances have arisen, or where there is evidence of confusion as to what is allowed under copyright law.

10.23 These opinions would not be binding but the courts should have a duty to take account of them in considering cases to which they are relevant.

10.24 The aim is to increase clarity and predictability in relation to copyright infringement. This opinions function would enable the IPO to issue formal notices setting out its interpretation of, for example, the application of copyright exceptions to particular circumstances and applications of technology.

10.25 In Chapter 4 we recommended that the Government bring about a Digital Copyright Exchange. We noted that some oversight of its operation would be required, and that that role might be given to the IPO or to Ofcom. The final decision on its location should be consistent with the objective of an IPO equipped to oversee the copyright framework and secure its continuing adaptation to its evolving environment.

Recommendation: An IP system responsive to change.

The IPO should be given the necessary powers and mandate in law to ensure that it focuses on its central task of ensuring that the UK's IP system promotes innovation and growth through efficient, contestable markets. It should be empowered to issue statutory opinions where these will help clarify copyright law. As an element of improved transparency and adaptability, Government should ensure that by the end of 2013, the IPO publishes an assessment of the impact of those measures advocated in this review which have been accepted by Government.

10.26 And finally. In their response to the *Call for Evidence* the Patent Judges in England and Wales said that a comprehensive review and redrafting of the Copyright Act is now considerably overdue. The Review agrees. Implementation of the strategic assessment of the IP framework provided by the Review would be incomplete without consideration of the statutory underpinning, which needs to be both tailored to modern circumstances and as clear as possible. The Review recognises the pressures on Parliamentary time, and the Government's commitment in March to avoid further IP reviews during this Parliament. We urge Ministers not to allow these constraints to prevent the Government from bringing the Copyright Act up to date.

Chapter 11

Impact

11.1 This review has identified the need for a strategic change in policy direction in order to ensure that the UK has an approach to IP best suited to supporting innovation and promoting economic growth in the digital age. This change is modest in ambition and wholly achievable.

11.2 We do not propose any diminution of existing non-economic IP rights, as we take the view that rights granted for non-economic purpose, such as the moral rights of creators to prevent usage of their work in unacceptable contexts, are compatible with the economic goals upon which the Review was asked to focus.

11.3 Our message to Government is that it must ensure that in future economic concerns are as assiduously guarded as these other longstanding interests have been for more than three centuries. We also urge that all IP policy be based upon a rigorous evaluation of evidence and that the UK's stance in international negotiations be visibly evidence-based.

11.4 The Review's specific recommendations are designed to support our increasingly intangibles-intensive economy. This requires:

- an efficient digital copyright licensing system, where nothing is unusable because the rights owner cannot be found;
- an approach to exceptions in copyright which encourages successful new digital technology businesses both within and beyond the creative industries;
- a patent system capable of preventing booming demand for patents causing serious barriers to market entry in critical technologies;
- reliable and affordable advice for smaller companies, to enable them to thrive in the IP-intensive parts of the UK economy;
- refreshed institutional governance of the UK's intellectual property system which enables it to adapt organically to change.

11.5 If the Review's recommendations are acted upon, the result will be stronger rates of innovation and increased economic growth in the UK. This will happen in a context where IP law, including copyright law, is clear and observed by most people without controversy.

11.6 The Review team has carried out an economic assessment of the impact of implementation of our recommendations, drawing on advice from the IPO's economics team. We acknowledge the high degree of uncertainty inherent in projections of this sort. The Team's estimate is that if the Review's recommendations are implemented in full they will add between 0.3 per cent and 0.6 per cent to the UK's annual GDP growth, not counting significant reductions in transaction costs for the public and private sectors, which the team puts at £750 million a year.

11.7 A more detailed account of this impact assessment is set out in Supporting Document EE (Economic Impact of Recommendations).

Recommendations

1. Evidence. Government should ensure that development of the IP System is driven as far as possible by objective evidence. Policy should balance measurable economic objectives against social goals and potential benefits for rights holders against impacts on consumers and other interests. These concerns will be of particular importance in assessing future claims to extend rights or in determining desirable limits to rights.

2. International priorities. The UK should resolutely pursue its international interests in IP, particularly with respect to emerging economies such as China and India, based upon positions grounded in economic evidence. It should attach the highest immediate priority to achieving a unified EU patent court and EU patent system, which promises significant economic benefits to UK business. The UK should work to make the Patent Cooperation Treaty a more effective vehicle for international processing of patent applications.

3. Copyright licensing.

- In order to boost UK firms' access to transparent, contestable and global digital markets, the UK should establish a cross sectoral Digital Copyright Exchange. Government should appoint a senior figure to oversee its design and implementation by the end of 2012. A range of incentives and disincentives will be needed to encourage rights holders and others to take part. Governance should reflect the interests of participants, working to an agreed code of practice.
- The UK should support moves by the European Commission to establish a framework for cross border copyright licensing, with clear benefits to the UK as a major exporter of copyright works. Collecting societies should be required by law to adopt codes of practice, approved by the IPO and the UK competition authorities, to ensure that they operate in a way that is consistent with the further development of efficient, open markets.

4. Orphan works. The Government should legislate to enable licensing of orphan works. This should establish extended collective licensing for mass licensing of orphan works, and a clearance procedure for use of individual works. In both cases, a work should only be treated as an orphan if it cannot be found by search of the databases involved in the proposed Digital Copyright Exchange.

5. Limits to copyright. Government should firmly resist over-regulation of activities which do not prejudice the central objective of copyright, namely the provision of incentives to creators. Government should deliver copyright exceptions at national level to realise all the opportunities within the EU framework, including format shifting, parody, non-commercial research, and library archiving. The UK should also promote at EU level an exception to support text and data analytics. The UK should give a lead at EU level to develop a further copyright exception designed to build into the EU framework adaptability to new technologies. This would be designed to allow uses enabled by technology of works in ways which do not directly trade on the underlying creative and expressive purpose of the work. The Government should also legislate to ensure that these and other copyright exceptions are protected from override by contract.

6. Patent thickets and other obstructions to innovation. In order to limit the effects of these barriers to innovation, the Government should:

- take a leading role in promoting international efforts to cut backlogs and manage the boom in patent applications by further extending “work sharing” with patent offices in other countries;
- work to ensure patents are not extended into sectors, such as non-technical computer programs and business methods, which they do not currently cover, without clear evidence of benefit;
- investigate ways of limiting adverse consequences of patent thickets, including by working with international partners to establish a patent fee structure set by reference to innovation and growth goals rather than solely by reference to patent office running costs. The structure of patent renewal fees might be adjusted to encourage patentees to assess more carefully the value of maintaining lower value patents, so reducing the density of patent thickets.

7. The design industry. The role of IP in supporting this important branch of the creative economy has been neglected. In the next 12 months, the IPO should conduct an evidence based assessment of the relationship between design rights and innovation, with a view to establishing a firmer basis for evaluating policy at the UK and European level. The assessment should include exploration with design interests of whether access to the proposed Digital Copyright Exchange would help creators protect and market their designs and help users better achieve legally compliant access to designs.

8. Enforcement of IP rights. The Government should pursue an integrated approach based upon enforcement, education and, crucially, measures to strengthen and grow legitimate markets in copyright and other IP protected fields. When the enforcement regime set out in the DEA becomes operational next year its impact should be carefully monitored and compared with experience in other countries, in order to provide the insight needed to adjust enforcement mechanisms as market conditions evolve. This is urgent and Ofcom should not wait until then to establish its benchmarks and begin building data on trends. In order to support rights holders in enforcing their rights the Government should introduce a small claims track for low monetary value IP claims in the Patents County Court.

9. Small firm access to IP advice. The IPO should draw up plans to improve accessibility of the IP system to smaller companies who will benefit from it. This should involve access to lower cost providers of integrated IP legal and commercial advice.

10. An IP system responsive to change. The IPO should be given the necessary powers and mandate in law to ensure that it focuses on its central task of ensuring that the UK's IP system promotes innovation and growth through efficient, contestable markets. It should be empowered to issue statutory opinions where these will help clarify copyright law. As an element of improved transparency and adaptability, Government should ensure that by the end of 2013, the IPO publishes an assessment of the impact of those measures advocated in this review which have been accepted by Government.

Annex A

Terms of reference

The Review will develop proposals on how the UK's intellectual property framework can further promote entrepreneurialism, economic growth and social and commercial innovation. It will examine the available evidence as to how far the IP framework currently promotes these objectives, drawing on US and European as well as UK experience, and focusing in particular on:

- Identification of barriers to growth in the IP system, and how to overcome them;
- How the IP framework could better enable new business models appropriate to the digital age.

Among the subjects to which the Review is expected to bring this perspective are:

- IP and barriers to new internet-based business models, including information access, costs of obtaining permissions from existing rights-holders, and investigating what are the benefits of "fair use" exceptions to copyright and how these might be achieved in the UK;
- The cost and complexity of enforcing IP rights within the UK and internationally;
- The interaction of the IP and Competition frameworks;
- The cost and complexity to SMEs of accessing IP services to help them to protect and exploit IP.

The Review will make recommendations on:

- How the IP system nationally and internationally can best work to promote innovation and growth in the 21st century with a view to setting the agenda for the long term;
- What short and medium term measures can be taken now within the international framework to give the UK a competitive advantage.

The Review will report to the Secretary of State for Business, Innovation and Skills and to the Chancellor of the Exchequer, in April 2011.

Annex B

Stakeholders Met during Review of IP and Growth

ABPI (Association of British Pharmaceutical Industries)
ACG (The Anti Counterfeiting Group)
ACID (Anti Copying in Design)
ACPO (The Association of Chief Police Officers)
Alliance Against IP Theft
Apple
Association of Independent Music
Audio Network Plc
BAPLA (British Association of Pictures, Libraries and Agencies)
BBC
BioIndustry Association
BPI (British Recorded Music Industry)
Brand Finance plc
British Copyright Council
British Library
British Screen Advisory Council
British Sky Broadcasting Group
CBI Senior IP Committee
Channel 4
Consumer Focus
Content and Communications Industries
Creative Coalition Campaign
Creators' Rights Alliance
Design and Artist Copyright Society (DACS)
Ericsson
European Publishers Council
FACT (Federation Against Copyright Theft)
FAST (Federation Against Software theft)
Featured Artists Coalition
Four IP Institutes' Presidents
Getty Images
Google
Intellect
International Chamber of Commerce
IP Federation
ITV
Libraries and Archives Copyright Alliance
Licensing Executives Society
Mathys and Squire LLP
Merryfield Associates
Microsoft
MMF (Music Managers Forum)
Motion Picture Association
National Union of Journalists
National Education Network
NESTA (The National Endowment for Science, Technology and the Arts)
News Corporation
Open Rights Group
PACT (Producers Alliance for Cinema and Television)
Pearson plc
Periodical Publishers Association
Phonographic Performance Ltd (PPL)
Premier League
Performing Right Society (PRS)
Qualcomm
Reed Elsevier
Rightscom
Sports Rights Owners Coalition
Stop43
TALKTalk
TSB (Technology Strategy Board)
TSI (The Trading Standards Institute)
The Newspaper Society
UK Interactive Entertainment Association
UK Music and The British Music Industry (BPI)
Universities UK and AURIL
William Reed Business Media
Wragge & Co LLP
Yahoo!

Meeting with MPs

Adrian Bailey, Ivan Lewis, Don Foster, Mike Weatherley, Damian Collins, Pete Wishart, Ian Lucas, Chi Onwurah and David Lammy.

Additional Attendees

Bill Bush (Premier League), Richard Mollet (Publishers Association), Geoff Taylor (BPI), Dids Macdonald (ACID), and Lavinia Carey and Susan Winter (Alliance Against IP Theft).

Review Events

IPPR Round Table: 25 representatives from a number of sectors including publishers, artists unions, software and scientific research

IP and Competition Seminar: 40 attendees, including leading economists, legal practitioners, entrepreneurs, policy advisers, investors and rights holders from business, Government and academia.

Imperial College Workshop on Innovation and IP: a range of larger businesses.

TechHub survey event: Approximately 35 attendees, including internet/digital SMES and start-ups,

IP Services for SMEs at Intellectual Property Institute: patent and trade mark attorneys, other service providers and SMEs

Debate at Royal Society for the Arts (RSA): audience of 250 from a wide range of organisations.

IP Review Surgery: The Review team held an open surgery event and invited interested parties to individual meetings. 20 people registered for this including, entrepreneurs, SMEs, policy advisers, investors and rights holders from business.

Meetings in the USA

Carnegie Mellon University

Druce & Quigg

Duke University

Electronic Arts

Facebook

Google

Greenberg Traurig

Harvard University

Massachusetts Institute of Technology

NBC Universal

Neurosky

New Atlantic Ventures

New York Law School

News Corporation

Novak

Onlive

Osborne Clark

Pond Ventures

Quid

Red Hat

Silicon Valley Bank

Sony Pictures Entertainment

SRI International

Stanford University

The Motion Picture Association of America

The National Academies

The Office of the Chairman of the Senate

Judiciary Committee

The US Copyright Office

The US Court of Appeals for the Federal Circuit

The US Department of Commerce

The US Intellectual Property Enforcement

Coordinator

The US Patent and Trademark Office

Time Warner

Viacom

Walt Disney Company

Yahoo!

Yelp

Zynga

Annex C

Submissions Received to the *Call for Evidence*

A

A UK Registered and Chartered Patent Attorney A
European Patent Attorney
ACID
Action on Authors Rights
AKA Illustration
Allen and Overy LLP
Alliance of Managers, Artists and Performers
All-Party IP Group
Allvoice Developments Ltd
Anderson, Mike
Anti-Counterfeiting Group and British Brands
Group
Arcadia Fund
Associated Newspapers
Association of British Pharmaceutical Industry
Association of Curators of Art and Design Images
and Art Libraries Society
Association of Illustrators
Association of Independent Music
Association of Learned and Professional Society
Publishers
Association of Photographers Limited
AstraZeneca Pharmaceuticals R and D
Atmosphere
ATSF
Authors Licensing & Collecting Society

B

Barker, Graham
Batey, Angus
Bathgate, Stephen

BBC

BCS, The Chartered Institute for IT
BECTA
BECTU
Billings Jackson Design
BioIndustry Association
Bob Marchant Photography
Bradwell IT Solutions Ltd
Brand Finance plc
Bridgeman Art Library
British Association of Journalists
British Association of Picture Libraries and
Agencies
British Copyright Council
British Equity Collecting Society Limited
British Film institute
British Library
British Photographic Council
British Recorded Music Industry
British Screen Advisory Council
British Sky Broadcasting Group Plc
British Society of Plant Breeders
British Telecom
British Video Association
Brown, Dr Abbe (School of Law, University of
Edinburgh)
Burr, Alex

C

Carl Pendle Photography
CBI
Centre for Intellectual Property Policy and

Management Bournemouth University
Channel 4
Chapman, Simon
Chartered Institute of Patent Attorneys
Chartered Institute of Public Relations
Chris Close Photography
Cleary Gottlieb Steen & Hamilton LLP
Clive-Smith, Martin
Coalition for a Digital Economy
Computers & Communications Industry
Association
Connect 2 Innovation
Consumer Focus
Copyright Agency
Copyright for Innovation joint statement
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List of Supporting Documents

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- C *Call for Evidence* December 2010
- D Report of Review Event held at TechHub 15 February 2011
- E Audio/Video Record of Review Event held at RSA 2 March 2011
- F Note on IPPR Roundtable discussion with Professor Ian Hargreaves on the Independent Review of Intellectual Property and Growth 26 January 2011
- G Clayton T and Mitra-Kahn B, 2010, *Approaches to evidence on IPRs, competition and innovation*, Note for the Review of IP and Growth
- H Greenhalgh C and Rogers M, 2010, *Competition, Intellectual Property and Innovation*, Report for the Review of IP and Growth
- I PACEC, 2011, *The VoD Sector. Copyright Issues. Research on Business Impacts, Innovation and Competition*, Report for the Review of IP and Growth
- J Dnes A, 2011 *A Law and Economics Analysis of Fair Use Differences Comparing the US and UK*, Report for the Review of IP and Growth
- K Iliev I, Tang P, van der Merwe H and Tannock Q, 2011 *Emerging patent thickets and standards in the medical devices and telehealth space: Innovation, market dynamics and policy options in cross-over technologies*. Report for the Review of IP and Growth
- L PACEC, 2011, *Research on Finance for IPR*, Report for the Review of IP and Growth
- M TNS-BMRB, 2011 *SME Access to Intellectual Property Services*, Survey Report for the Review of IP and Growth

- N TNS-BMRB, 2011, *SME Qualitative Interviews*, Report for the Review of IP and Growth
- O Boys P, 2011, *Institutional Reform*, Report for the Review of IP and Growth
- P Intellectual Property Rights and Competition - Where Conflict creates Barriers to Growth and Innovation, Discussion Document for the Review of IP and Growth
- Q Fair Use *Call for Evidence* responses
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Chapter 1 - References

- 1 NESTA, 2009, *The Vital 6%: How high-growth innovative businesses generate prosperity and jobs*, London: National Endowment for Sciences, Technology and the Arts <http://www.nesta.org.uk/library/documents/Vital-six-per-cent-Nov2010-v3.pdf>, see figure 3
- 2 See Supporting Document H (Greenhalgh C and Rogers M, 2010, *Competition, Intellectual Property and Innovation*, Report for the Review of IP and Growth)
- 3 “Productivity isn’t everything, but in the long run it is almost everything. A country’s ability to improve its standard of living over time depends almost entirely on its ability to raise output per worker.” Paul Krugman, OECD, 2006, *Compendium of Productivity Indicators*, Paris
- 4 BIS & NESTA, 2011, *Annual Innovation Report 2010*, <http://www.bis.gov.uk/assets/biscore/innovation/docs/a/11-p188-annual-innovation-report-2010.pdf>
- 5 NESTA, 2009, *The Vital 6%: How high-growth innovative businesses generate prosperity and jobs*, London: National Endowment for Sciences, Technology and the Arts <http://www.nesta.org.uk/library/documents/Vital-six-per-cent-Nov2010-v3.pdf>, see page 7
- 6 Bravo-Biosca A and Criscuolo C, 2010, *Evidence on business growth dynamics*, Presentation and paper for the OECD Working Party on Industry Analysis, 8-9 November
- 7 Aghion P, Harris C, Howitt P and Vickers J, 2001, *Competition, Imitation and Growth with Step-by-Step Innovation*, Review of Economic Studies 68(3): 467-492; and Airaksinen A, Panizza A, Bartelsman E, Hagsten E, von Leuween G, Franklin M, Maliranta M, Kotnik P, Stam P, Rouvinen P, Farooqui S, Quantin S, Svanberg S, Clayton T and Barbesol Y, 2008, *Information Society: ICT impact assessment by linking data from different sources*, Eurostat, http://epp.eurostat.ec.europa.eu/portal/page/portal/information_society/documents/Tab/ICT_IMPACTS_FINAL_REPORT_V2.pdf.
- 8 Cited in Howkins J, 2001/2007, *The Creative Economy: How people make money from ideas*, Penguin
- 9 NESTA, 2009, *Innovation Index*, <http://www.nesta.org.uk/library/documents/innovation-index.pdf>; for OECD data on intangible investment see: OECD, 2009, *OECD Innovation Strategy: Getting a Head Start on Tomorrow*, Paris, http://www.oecd.org/document/15/0,3746,en_21571361_44354303_45154895_1_1_1_1.00.html; intangible and tangible investment data is available on <http://www.oecd.org/innovation/strategy/measuring>
- 10 Haskel J, Goodridge P, Pesole A, Awano G, Franklin M and Kastrinaki Z, 2011, *Driving economic growth Innovation, knowledge spending and productivity growth in the UK*, NESTA, Page 15, table 1, http://www.nesta.org.uk/library/documents/Driving_Ecc_Growth_Web_v4.pdf
- 11 Farooqui S, Goodridge P and Haskel J, 2011, *The Role of Intellectual Property Rights in the UK Market Sector*, Report for the Intellectual Property Office, working paper available on http://www.coinvest.org.uk/pub/CERIBA/IPRsGrowth/IPO_ROLE_OF_IPRS_26April11.pdf
- 12 See Yanagisawa T and Guellec D, 2009, *The emerging patent marketplace*, OECD, page 8, <http://www.oecd.org/dataoecd/62/55/44335523> for patent licensing trade values (\$110bn+ in 2006); and UNCTAD *Creative Economy Report 2010*, <http://www.unctad.org/Templates/WebFlyer.asp?intItemID=5763&lang=1>, for creative industry licensing figures (\$500bn+ in 2008)
- 13 NESTA, 2009, *The Vital 6%: How high-growth innovative businesses generate prosperity and jobs*, London: National Endowment for Sciences, Technology and the Arts. <http://www.nesta.org.uk/library/documents/Vital-six-per-cent-Nov2010-v3.pdf>
- 14 Bartelsman E, Haltiwanger J and Scarpetta S, 2009, *Measuring and analysing cross-country differences in firm dynamics* NBER Chapter, *Producer Dynamics: New Evidence from Micro Data*, pages 15-76, NBER
- 15 Booz & Co, 2008, *Beyond Borders: The Global Innovation 1000*
- 16 Three main reports which provide an overview and empirical findings are: 1. Federal Trade Commission, 2003, *To promote innovation: The proper balance of competition and patent law*, <http://www.ftc.gov/os/2003/10/innovationrpt.pdf>; 2. Merrill S A, Levin R C and Myers M B (eds.), 2004, *A Patent System for the 21st Century*, The National Academies Press, www.nap.edu/catalog.php?record_id=10976; 3. Merrill S A and Mazza A (eds), 2006, *Reaping the Benefits of Genomic and Proteomic Research: Intellectual Property Rights, Innovation, and Public Health*, Washington DC: The National Academies Press
- 17 For the original formulation see: Heller M A, 1998, *The Tragedy of the Anticommons: Property in the Transition from Marx to Markets*, Harvard Law Review 111 (3): pp. 621-88, <http://www.unc.edu/courses/2007fall/geog/804/001/Heller%201998%20Tragedy%20of%20the%20Anticommons.pdf>; or Heller M A and Eisenberg R S, 1998, *Can Patents Deter Innovation? The Anticommons in Biomedical Research*, Science 1, Vol. 280, No. 5364: pp. 698-701, <http://www.sciencemag.org/content/280/5364/698.full>; For the economic model see: Buchanan J M and Yoon Y J, 2000, *Symmetric Tragedies: Commons and Anticommons*, Journal of Law and Economics 43(1): pp. 1-13, <http://www.econ.ucsb.edu/~tedb/Courses/Ec100C/Readings/BuchananYoon.pdf>

- 18 Heller M, 2008. *Gridlock Economy: How Too Much Ownership Wrecks Markets, Stops Innovation, and Costs Lives*. Basic Books, see pages 4-5
- 19 Marrano M G, Haskel J and Wallis G, 2009, *What happened to the Knowledge Economy? ICT, Intangible Investment and Britain's Productivity Record Revisited*, Review of Income and Wealth, Vol:55, Pages:686-716
- 20 Franklin M, Stam P and Clayton T, 2009, *ICT impact assessment by linking data*, Economic & Labour Market Review 3(10): pp. 18-27, http://www.statistics.gov.uk/elmr/10_09/downloads/ELMR_Oct09_Stam.pdf
- 21 Brynjolfsson E, McAfee A, Sorell M and Zhu F, 2006, *Scale without Mass: Business Process Replication and Industry Dynamics*, HBS working paper, <http://hbswk.hbs.edu/item/5532html>
- 22 <http://www.internetworldstats.com/stats.htm>
- 23 <http://www.bbc.co.uk/news/technology-13145562>

Chapter 2 – References

- 1 Arora A, Ceccagnoli M and Cohen W M, 2008, *R&D and the patent premium*, International Journal of Industrial Organisation 28(5): 1153-1179
- 2 See for example, Schankerman M, 1998, *How Valuable is Patent Protection*, Rand Journal of Economics, 29(1): 77-107; or Schankerman M and Lanjouw J, 2004, *Patent Quality and Research Productivity: Measuring Innovation with Multiple Indicators*, The Economic Journal 114(4): 441-465
- 3 Greenhalgh C and Rogers M, 2007, *Trade Marks and Performance in UK Firms: Evidence of Schumpeterian Competition through Innovation*, Economics Series Working Papers 300, University of Oxford, Department of Economics.
- 4 Thoma G; Torrisi S, Gambardella A, Guellec D, Hall B H and Harhoff D, 2010, *Harmonising and Combining Large Datasets - An Application to Firm-Level Patent and Accounting Data*, NBER Working Paper 15851
- 5 Ceccagnoli M, Gambardella A, Giuri P, Licht G and Mariani M, 2005, *Study on Evaluating the Knowledge Economy - What are Patents Actually worth?*, http://ec.europa.eu/internal_market/indprop/docs/patent/studies/patentstudy-report_en.pdf
- 6 Hughes A and Mina A, 2010, *The Impact of the Patent System on SMEs*, A Report to the Strategic Advisory Board for Intellectual Property (SABIP), <http://www.ipo.gov.uk/ipresearch-impact-201011.pdf>
- 7 Corrigan R and Rogers M, 2005, *The Economics of Copyright*, World Economics 6(3): 153-74 <http://www.world-economics-journal.com/Contents/ArticleOverview.aspx?ID=219>
- 8 Greenhalgh C and Rogers M, 2010, *Innovation, Intellectual Property and Economic Growth*, Princeton University Press, 2010
- 9 Clayton T, Franklin M and Stam P, 2009, *ICT impact assessment by linking data; Assesses the impact of information and communications technologies on productivity across Europe*, ONS Economic & Labour Market Review, <http://www.statistics.gov.uk/cci/article.asp?ID=2296>
- 10 Bravo-Biosca A and Criscuolo C, 2010, *Evidence on business growth dynamics*, Presentation and paper for the OECD Working Party on Industry Analysis, 8-9 November
- 11 See Supporting Document H (Greenhalgh C and Rogers M, 2010, Competition, Intellectual Property and Innovation, Report for the Review of IP and Growth)
- 12 Shapiro C, 2001, *Navigating the Patent Thicket: Cross Licenses, Patent Pools, and Standard-Setting*, Innovation Policy and the Economy, (Vol. I), pp. 119–150, MIT Press. Quote on p 119.
- 13 European Commission, 2005, *First evaluation of Directive 96/9/EC on the legal protection of databases*, DG Internal Market and Services Working Paper, http://ec.europa.eu/internal_market/copyright/docs/databases/evaluation_report_en.pdf
- 14 Handke C, 2010, *The Economics of Copyright and Digitisation: A Report on the Literature and the Need for Further Research*, Report for the UK Strategic Advisory Board for Intellectual Property Policy <http://www.ipo.gov.uk/ipresearch-economics-201005.pdf>
- 15 IPO, 7 Jan 2010, *Impact Assessment of: Proposed Directive to extend the term of copyright protection for performers and sound recordings*
- 16 Png I P L and Qiu-hong W, 2009, *Copyright Law and the Supply of Creative Work: Evidence from the Movies*, Review of Economic Research on Copyright Issues

Chapter 3 – References

- 1 IPO estimate based on ONS, 2010, *Pink Book*, <http://www.statistics.gov.uk/statbase/product.asp?vlnk=1140>
- 2 See Supporting Document DD (SMEs and the IP Framework)
- 3 *National Patent Development Strategy 2011-2020*, English translation available from <http://graphics8.nytimes.com/packages/pdf/business/SIPONatPatentDevStrategy.pdf>
- 4 <http://www.iprcommission.org/>
- 5 EU Commission, 2010, *A Digital Agenda for Europe*, COM(2010) 245 final/2, 26 August 2010, <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2010:0245:FIN:EN:PDF>
- 6 See for example Clayton C, 1999, *The Performance of Europe-wide Businesses: Has the Single Market Led to Scale Economies?*, London Business School Strategy Review, Volume 10, Issue 1, pp 15-19, which shows the positive effect of the EU single market on promoting innovative EU firms
- 7 ONS, 2010, *Pink Book*, <http://www.statistics.gov.uk/statbase/product.asp?vlnk=1140>
- 8 Prahalad C and Mashelkhar R, 2010, *Innovation's Holy Grail*, Harvard Business Review
- 9 Harhoff D, 2009, *Economic Cost-Benefit Analysis of a Unified and Integrated European Patent Litigation System*, Report for the Institute for Innovation Research, Technology Management and Entrepreneurship
- 10 <http://www.bis.gov.uk/assets/biscore/economics-and-statistics/docs/e/11-517-economic-consequences-of-completing-single-market> – taking a conservative estimate of the contribution made by IP harmonisation to inter country barriers of one per cent
- 11 See Supporting Document W (European Union Patent and the European and EU Patent Court)
- 12 Hassan E, Yaqub O and Diepeveen S, December 2009, *Intellectual Property and Developing Countries: A review of the literature* <http://www.ipo.gov.uk/ipresearch-ipdevelop-200912.pdf>
- 13 HM Treasury/BIS, 2011, *The Plan for Growth*, http://cdn.hm-treasury.gov.uk/2011budget_growth.pdf, see page 100
- 14 WIPO, 2009, *The Future of the PCT*, PCT/WG/2/3, 3 April 2009, document prepared by the International Bureau for a meeting of the PCT Working Group

Chapter 4 - References

- 1 See for instance Zittrain J, 2009, *The Future of the Internet: and how to stop it*, Penguin
- 2 See Supporting Document I (PACEC, 2011, *The VoD Sector. Copyright Issues. Research on Business Impacts, Innovation and Competition*, Report for the Review of IP and Growth)
- 3 Foster R and Broughton T, 2011, *Creative UK: The Audiovisual Sector and Economic Success*, <http://www.commcham.com/publications/creative-uk>
- 4 Farooqi S, Goodridge P and Haskel J, 2011, *The Role of Intellectual Property Rights in the UK Market Sector*, Report for the IPO
- 5 HM Treasury and BIS, March 2011, *The Plan for Growth*, quoting *UK Trade Performance: Patterns in UK and global trade growth*, BIS Economics Paper No.8, November 2010
- 6 HM Treasury and BIS, March 2011, *The Plan for Growth*, ibid
- 7 Handke C, 2010, *The Economics of Copyright and Digitisation*, Erasmus University, Research commissioned by the Strategic Advisory Board for Intellectual Property Policy
- 8 Association of American Publishers February 2011 sales report, <http://www.publishers.org/press/30/>
- 9 Gelles D and Edgecliffe-Johnson A, 2011, *Publishers rush to erect defence against piracy*, Financial Times 15 April 2011
- 10 BPI submission
- 11 See Supporting Document D (Report of Review Event held at TechHub 15 February 2011)
- 12 See Supporting Document DD (SMEs and the IP Framework)
- 13 Speech at a conference held by the Queensland University of Technology (QUT) on the future of copyright, 25 February 2011
- 14 <http://books.google.com/>
- 15 Judge Denny Chin, Case No. 05 CV 8136 (S.D.N.Y.), Court ruling of 22.03.11
- 16 The Single European Act which established the objective of achieving a single market, came into force in July 1987.
- 17 See for example the cases of Spotify which took two years to sign licensing agreements and still does not have licenses for the whole of Europe, <http://www.spotify.com/uk/blog/archives/2008/10/07/weve-only-just-begun/>
- 18 We note also the report of the 'Comité des Sages' reflection group on bringing Europe's culture online, 2011, http://ec.europa.eu/information_society/activities/digital_libraries/doc/reflection_group/final-report-cdS3.pdf

Chapter 5 – References

- 1 See Supporting Document Q (Fair Use *Call for Evidence* responses)
- 2 For example, submissions by Reed Elsevier, the Motion Picture Association, the Publishers Association, and News Corporation
- 3 See Supporting Document EE (Economic Impact of Recommendations)
- 4 McCarthy D, Wolf H and Wu Y, 2000, *The Growth Costs of Malaria* National Bureau of Economic Research Inc, Working Paper No. 7541; *Malaria slows economic growth in Africa by up to 1.3 per cent each year*, Rollback Malaria Campaign (<http://www.malaria.org/news239.html>); Skolnik, R, 2007, *Essentials of Global Health*. Jones and Bartlett Publishers, p. 198
- 5 Urban J, 2010, *Updating Fair Use for Innovators and Creators in the Digital Age: Two Targeted Reforms*, Public Knowledge <http://www.publicknowledge.org/pdf/fair-use-report-02132010.pdf>
- 6 See Supporting Document T (Text Mining and Data Analytics in *Call for Evidence* responses)
- 7 British Library submission
- 8 See Comparative study of copyright levies in Europe, ESRC report for ERE/IPO by Professor Martin Kretschmer, 2011 <http://www.cippm.org.uk/publications.html>

Chapter 6 – References

- 1 IPO, 2010, *Patent Backlogs and Mutual Recognition. An Economic study by London Economics*. Available at: <http://www.ipo.gov.uk/p-backlog-report.pdf>
- 2 See Supporting Document Y (Barriers to Growth Arising from the Patent Granting Process)
- 3 IPO, 2010, *Patent Backlogs and Mutual Recognition. An Economic study by London Economics* Available at: <http://www.ipo.gov.uk/p-backlog-report.pdf> see pg xiv
- 4 <http://www.techdirt.com/articles/20101028/09595211635/why-the-answer-to-the-smartphone-patent-thicket-is-not-a-patent-pool.shtml>
- 5 Hall B and Ziedonis R, 2001, *The Patent Paradox Revisited: An Empirical Study of Patenting in the Semiconductor Industry, 1979-1995*, RAND Journal of Economics 32(1), 101-128
- 6 Ziedonis R, 2003, *Don't Fence Me In: Fragmented Markets for Technology and the Patent Acquisition Strategies of Firms*, Management Science, 50(6), 804-820
- 7 Noel M and Schankerman M, 2006, *Strategic Patenting and Software Innovation*, CEP Discussion Paper No 740
- 8 See Supporting Document Z (Patentability of Computer Programs and Business Method Inventions)
- 9 See Supporting Document V (A One Size Fits All Patent System?)
- 10 Heller MA and Eisenberg RS, 1998, *Can patents deter innovation? The anticommons in biomedical research*, Science 280, 698–701
- 11 See Supporting Document X (Patent Infringement – the Research Exception)
- 12 Levin RC, Klevorick AK, Nelson RR, and Winter SG, 1987, *Appropriating the returns from industrial research and development*, Brookings Papers on Economic Activity 1987(3), 783–831
- 13 Cohen WM, Nelson RR, and Walsh J, 2000, *Protecting Their Intellectual Assets: Appropriability Conditions and Why U.S. Manufacturing Firms Patent (or Not)*. NBER Working Paper No. 7552
- 14 Cohen WM, Goto A, Nagata A, Nelson RR, and Walsh JP, 2002, *R&D spillovers, patents and the incentives to innovate in Japan and the United States*, Research Policy 31, 1349-1367
- 15 Arora A, Fosfuri A and Gambardella A, 2001, *Markets for Technology: The Economics of Innovation and Corporate Strategy*. Cambridge, MA: MIT Press
- 16 Bessen J and Meurer M, 2008, *Patent Failure*, Princeton, Princeton University Press
- 17 Bessen J and Maskin E, 2006, *Sequential innovation, patents, and imitation*. Working paper, Boston University School of Law and Princeton University
- 18 See Supporting Document Z (Patentability of Computer Programs and Business Method Inventions)
- 19 Hart R and Pitkethly R, 2003, *Business Implications of Business Method Patents*, Report for the Intellectual Property Institute
- 20 Hart R, Holmes P and Reid J, 1999, *The Economic Impact of Patentability of Computer Programs*, Report to the European Commission http://ec.europa.eu/internal_market/indprop/docs/comp/study_en.pdf
- 21 See Supporting Document D (Report of Review Event held at TechHub 15 February 2011)
- 22 Lerner J, 1995, *Patenting in the Shadow of Competitors*, Journal of Law and Economics 38(2): 463-496
- 23 See Supporting Document Z (Patentability of Computer Programs and Business Method Inventions)
- 24 See Supporting Document Z (Patentability of Computer Programs and Business Method Inventions)
- 25 See Supporting Document AA (Patent Thickets, Licensing and Standards)
- 26 See Supporting Document K (Iliev I, Tang P, van der Merwe H and Tannock Q, 2011 *Emerging patent thickets and standards in the medical devices and telehealth space: Innovation, market dynamics and policy options in cross-over technologies*, Report for the Review of IP and Growth)
- 27 Shapiro C, 2001, *Navigating the Patent Thicket: Cross Licenses, Patent Pools, and Standard Setting*. NBER Chapters. in Innovation Policy and the Economy, Volume 1, pages 119-150 National Bureau of Economic Research, Inc.
- 28 Galasso A, 2010, *Broad Cross-License Negotiations*, http://www.rotman.utoronto.ca/facbios/file/Galasso_BCLA_300710.pdf

- 29 ETSI SR 001 544 v1.1.1, 2011, *Small and Medium-sized Enterprises (SMEs) in Standardisation; Understanding and supporting SME involvement in ICT standardisation*, EC Study on the interplay between standards and intellectual property rights (IPRs), <http://pda.etsi.org/pda/AQuery.asp>
- 30 Cockburn IM and MacGarvie MJ, 2009, *Patent Thickets, Licensing and Innovative Performance*, Discussion paper No. 08-101, Center for European Economic Research
- 31 See Supporting Document H (Greenhalgh C and Rogers M, 2010, *Competition, Intellectual Property and Innovation*, Report for the Review of IP and Growth)
- 32 Schankerman M and Pakes A, 1986, *Estimates of the value of patent rights in European Countries during the post-1950 period*, 96 (384) *Economic Journal* 1052–1076
- 33 de Rassenfosse G and van Pottelsberghe B, 2010, *The Role of Fees in Patent Systems: Theory and Evidence*, Discussion paper 7879, Centre for Economic Policy Research
- 34 Schankerman M, 2009, *Improving patent incentives and enforcement*, *Journal of Intellectual Property Law & Practice*, Vol. 4, No. 11
- 35 de Rassenfosse G and van Pottelsberghe B, 2010, *The Role of Fees in Patent Systems: Theory and Evidence*, Discussion paper 7879, Centre for Economic Policy Research
- 36 Hall BH, 2009, *The Use and Value of Patent Rights*, Research paper for the Strategic Advisory Board for Intellectual Property
- 37 See Supporting Document V (A One Size Fits All Patent System?)
- 38 Hall B, Graham S and Harhoff D, 2003, *Prospects for Improving US Patent Quality via Post-grant Opposition*, NBER Working Paper No. 9731

Chapter 7 - References

- 1 Haskel and Goodridge, 2010, *Role of IPRs in UK Intangible Investment*, Imperial College, Research commissioned by IPO, <http://www.coinvest.org.uk/bin/view/CERIBA/IPRsGrowth>
- 2 NESTA, 2011, *Driving Economic Growth*, http://www.nesta.org.uk/publications/assets/features/driving_economic_growth
- 3 OHIM figure: OHIM, 2010, *OHIM Statistical Reports 2003-2010*; IPO figure: IPO, 2011, *Facts and Figures 2009-2010*, <http://www.ipo.gov.uk/about-facts0910.pdf>
- 4 Raustiala K and Sprigman C, 2006, *The Piracy Paradox: Innovation and Intellectual Property in Fashion Design*, Virginia Law Review, Vol 92, No 8, Dec 2006, p1691; Blakely J, *Lessons from fashion's free culture*, http://www.ted.com/talks/lang/eng/johanna_blakley_lessons_from_fashion_s_free_culture.html

Chapter 8 – References

- 1 Submission from Sports Rights Owners Coalition
- 2 Submission from Viacom
- 3 <http://www.consumerfocus.org.uk/news/outdated-copyright-law-confuses-consumers>
- 4 SABIP, 2009, *Copycats? Digital consumers in the online age*, CIBER, UCL, see pp37-38
- 5 Brindley and Walker, 2011, *The Leading Question/Music Ally Speakerbox survey*; and Nielsen, 2011, *The Hyper-Fragmented World of Music survey*, on behalf of Midem
- 6 This view was similarly expressed by the US Government Accounting Office in GAO-10-423, April 2010, *Intellectual Property: Observations on Efforts to Quantify the Economic Effects of Counterfeit and Pirated Goods*
- 7 See Supporting Document CC (Data on the Prevalence and Impact of Piracy and Counterfeiting)
- 8 GAO-10-423, April 2010, *Intellectual Property: Observations on Efforts to Quantify the Economic Effects of Counterfeit and Pirated Goods* April
- 9 Following BASCAPs estimate that piracy costs the UK economy €1.4bn and that the core copyright industries in the UK are worth €113bn. As a percentage of the creative industry estimate, €175bn, piracy would cost the equivalent of 0.8 per cent. See Tables B and C on pages 7-8 in BASCAP / TERA, 2010, *Building a Digital Economy : The Importance of Saving Jobs in the EU's Creative Industries*, [http://www.icwbo.org/uploadedFiles/BASCAP/Pages/Building%20a%20Digital%20Economy%20-%20TERA\(1\).pdf](http://www.icwbo.org/uploadedFiles/BASCAP/Pages/Building%20a%20Digital%20Economy%20-%20TERA(1).pdf)
- 10 See Supporting Document CC (Data on the Prevalence and Impact of Piracy and Counterfeiting)
- 11 PRS for Music, 2009, *Adding up the UK Music Industry for 2009*
- 12 According to: Publishers Association, 2009, UK Book publishing industry statistics yearbook 2008, page 9: tables 1.1a, 1.1b and Publishers Association, 2010, UK Book publishing industry statistics yearbook 2009, page 3: tables 1.1a, 1.1b; although the two data tables are not consistent in their estimates due to a methodological change, the message is the same from both datasets.
- 13 Oberholzer-Gee F and Strumpf K, 2009, *File-Sharing and Copyright*, Harvard Business School, Working Paper 09-132
- 14 Waldfoegel J, March 2011, *Bye, bye, Miss American pie? The supply of new recorded music since Napster*, Nat Bureau of Economic Research, Cambr, Mass, USA,.
- 15 <http://www.taylorwessing.com/ipindex>
- 16 US Social Science Research Council, March 2011, *Media piracy in emerging economies*
- 17 US Social Science Research Council, March 2011 *Media piracy in emerging economies*
- 18 Haute Autorité pour la Diffusion des 'uvres et la Protection des Droits sur Internet
- 19 http://www.hadopi.fr/download/HADOPI_T0_version_long.pdf
- 20 Human Capital/PRS for Music, Nov 2010, *South Korea's experience with NGA and piracy*
- 21 Human Capital/PRS for Music, Nov 2010, *South Korea's experience with NGA and piracy*
- 22 Informa, March 24 2010, *Informa music and copyright: the international business newsletter of global music copyright*, issue 409
- 23 US Social Science Research Council, March 2011, *Media piracy in emerging economies*
- 24 Ghosh S, Maffioletti A and Ramello GB, July 22-23, 2005, *Intellectual Property Rights or Liability Rules: How Do We Tackle Copyright Infringement in the Music Market? Insights from Experimental Data*, paper presented at Workshop on the Law and Economics of Intellectual Property and Information Technology, Università Carlo Cattaneo Castellanza, LIUC
- 25 Brindley P and Walker T, 13 July 2009, *Filesharing music amongst UK teens down by a third*, The Leading Question/Music Ally. <http://www.musically.com/theleadingquestion/downloads/090713-file-sharing.pdf>
- 26 Advisory Committee on Enforcement, 2-4 Nov 2009, *Enforcing Intellectual Property Rights: An Economic Perspective*, Fifth Session, Geneva, see para 66
- 27 See Document DD (Counterfeiting and Piracy).
- 28 OECD, November 2009, *Magnitude of Counterfeiting and Piracy of Tangible Products: An Update*, Paris, OECD
- 29 Unwin P, Karuk V, Hedges P and Auton F, December 2008, *Valuing Brands in the UK Economy*, Westminster Business School, commissioned by the British Brands Group

- 30 <http://www.dime-eu.org/files/active/0/Greenhalgh.pdf>
- 31 Profit Impact of Market Strategy (PIMS Europe Ltd), September 1998, *Evidence on the contribution of branded consumer businesses to economic growth*, , commissioned by AIM – European Brands Association
- 32 BOP Consulting, 2009, *Changing Attitudes and Behaviour in the 'non-internet' Digital World and their Implications for Intellectual Property*, commissioned by SABIP
- 33 See Supporting Document CC (Data on the Prevalence and Impact of Piracy and Counterfeiting)
- 34 Lanjouw J and Schankerman M, Revised August 2003, *Protecting Intellectual Property Rights: Are Small Firms Handicapped?*, published as 'Protecting Patents: Are Small Firms Handicapped', *Journal of Law and Economics* 2004
- 35 SABIP, 2010, *Intellectual Property Enforcement in Smaller UK Firms*, <http://www.ipa.gov.uk/ipresearch-ipenforcement-201010.pdf>
- 36 See Supporting Document M (TNS-BMRB, 2011 *SME Access to Intellectual Property Services, Survey Report for the Review of IP and Growth*) which found 56 per cent of those surveyed had been able to enforce the rights without going to court, 17 per cent had given up attempting to enforce their rights. Less than one per cent gained a favourable court decision.
- 37 See Supporting Document D (Report of Review Event held at TechHub 15 February 2011)
- 38 Jackson review of civil litigation.
- 39 Jackson review of civil litigation.
- 40 Notably the AllVoice submission.

Chapter 9 – References

- 1 See Supporting Document DD (SMEs and the IP Framework)
- 2 The Survey of SMEs involved telephone interviews with a random sample of small firms that had applied for and/or been granted IPR by the IPO in recent years. See Supporting Document M (TNS-BMRB, 2011 *SME Access to Intellectual Property Services Survey Report for the Review of IP and Growth*) for full details of the survey methodology and findings
- 3 For example, “Because the SME finds it hard to identify the type of services it needs, it has problems identifying the type of IP adviser it needs. This is exacerbated by the fact that today the market for such services is becoming increasingly fragmented so that in practice the company is confronted with an increasingly bewildering array of choices many of which are delivered anonymously and remotely across the web from outside the UK.” *Fairoaks IP submission*
- 4 See Supporting Document M (TNS-BMRB, 2011 *SME Access to Intellectual Property Services Survey Report for the Review of IP and Growth*)
- 5 BS 8538:2011 Specification for the provision of services relating to the commercialisation of intellectual property rights
- 6 See Supporting Document M (TNS-BMRB, 2011 *SME Access to Intellectual Property Services Survey Report for the Review of IP and Growth*)
- 7 See Supporting Document M (TNS-BMRB, 2011 *SME Access to Intellectual Property Services Survey Report for the Review of IP and Growth*)
- 8 See Supporting Document D (Report of Review Event held at TechHub 15 February 2011)
- 9 See Supporting Document D (Report of Review Event held at TechHub 15 February 2011)
- 10 For example, the plans to establish the International IP Strategists Association (INTIPSA) *INTIPSA submission*
- 11 See Supporting Document L (PACEC, 2011, *Research on Finance for IPR*, Report for the Review of IP and Growth) for full details of the survey methodology and findings
- 12 See Supporting Document DD (SMEs and the IP Framework)
- 13 See Supporting Document M (TNS-BMRB, 2011 *SME Access to Intellectual Property Services Survey Report for the Review of IP and Growth*)
- 14 Data based on cases where the product / application involved a single piece of IP. Figures include both internal costs (i.e. time spent by staff on the IP process) and external costs (i.e. money spent on intermediaries, primarily attorneys).
- 15 Participant in qualitative research with SMEs. See Supporting Document N (TNS-BMRB, 2011, *SME Qualitative Interviews*, Report for the Review of IP and Growth) for full details of the methodology and the findings
- 16 The UK 2010 IP Awareness Survey commissioned by the IPO found that “larger companies are more IP aware ... whilst SMEs and the mass of Micro enterprises which form the cradle of IP and future large companies are in the main effectively unaware of the IP system.”
- 17 Participant in qualitative research with SMEs. See Supporting Document N (TNS-BMRB, 2011, *SME Qualitative Interviews*, Report for the Review of IP and Growth)

Chapter 10 – References

- 1 See Supporting Document A (Audit of Recommendations from Previous Reviews of Intellectual Property Rights)
- 2 See Supporting Document A (Audit of Recommendations from Previous Reviews of Intellectual Property Rights)
- 3 See Supporting Document A (Audit of Recommendations from Previous Reviews of Intellectual Property Rights)
- 4 *Gowers Review of Intellectual Property*, December 2006, http://webarchive.nationalarchives.gov.uk/+http://www.hm-treasury.gov.uk/media/6/E/pbr06_gowers_report_755.pdf, paragraph 6.9
- 5 May 2010, *Review of the Strategic Advisory Board for Intellectual Property Policy (SABIP) for the IPO*
- 6 Lord Puttnam, March 2010, *House of Lords Report Stage of the Digital Economy Bill*
- 7 Kay J, March 2011, *The difficult balance of intellectual property*, <http://www.ft.com/cms/s/0/98c17366-54c2-11e0-b1ed-00144feab49a.html#axzz1HPV1KQTW>
- 8 http://www.ivir.nl/news/Open_Letter_EC.pdf
- 9 Centre for Intellectual Property and Information Law, 2006, *Review of the Economic Evidence Relating to an Extension of the Term of Copyright in Sound Recordings*, University of Cambridge
- 10 Austin G and Heath I, January 2010, *UK IPO, A Value for Money Review*; National School of Government, February 2010, *Intellectual Property Office Efficiency Assessment*
- 11 Austin G and Heath I, January 2010, *UK IPO, A Value for Money Review*, *ibid*

