

## CHAPTER 8. SUMMARY OF THE EXPERT WORKSHOP, “SOCIETY’S GAIN FROM THE INTELLECTUAL PROPERTY EXCHANGE”

As part of the KBC2/IP project, the OECD hosted an expert workshop on the topic “Society’s Gain from the Intellectual Property Exchange” on 26-27 May 2014. The workshop addressed a number of topics that are complementary to those addressed in other chapters of this Report. This chapter begins with an overview of the cross-cutting themes from the workshop, followed by its key messages concerning patents, trade secrets, and copyright. It then presents a more detailed summary of the discussion. The workshop was designed around the observation that IP rights effectively operate as an exchange between society and inventors/creators, rewarding innovative and creative work while giving society the benefits of greater technological and artistic creation and diffusion<sup>464</sup>. Discussions in the workshop examined whether and how the exchange may be affected by broad changes that have been taking place, such as the growth of the Internet, the proliferation of mobile devices, globalisation, the digitisation of content, and the growing importance of IP. This summary reflects the information exchanged among the parties at the workshop. The views presented at the workshop and reflected in this chapter are the experts’ own and do not necessarily represent the views of the OECD or any of its Member countries. As such, this summary of the workshop is provided for information purposes on issues that were not addressed elsewhere in the project.

The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities or third party. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

It should be noted that statistical data on Israeli patents and trademarks are supplied by the patent and trademark offices of the relevant countries

## EXECUTIVE SUMMARY

### General Themes

- (i) *Intangible assets, particularly intellectual property (IP) rights, are an increasingly important and prominent element of the knowledge-based economy, with links to innovation, improved firm performance and increased consumer choice. Changes wrought by technological developments in recent decades, however—including the emergence of the Internet, digitisation, the changing business environment including practices like outsourcing and open innovation, and the growing importance of relatively new industries such as biotechnology and cloud computing—raise questions as to whether existing IP systems are dealing adequately with the challenges posed by such new technologies. There is a need, furthermore, to ensure that the importance of intangible assets is given sufficient recognition to secure the levels of investment required for their continued growth and economic contribution.*

As OECD economies have become more knowledge-based, IP rights have gained increased prominence and importance as both a means of facilitating innovation and of reaping the rewards of investment in technological and creative development. There is evidence that patent and trademark ownership, for example, results in faster firm growth, greater innovation and job creation. The workshop highlighted the financial value of investment in intangible assets in modern economies, which now considerably outranks more conventional investment in tangible assets in some OECD countries. Moreover, as the nature of the firm and of business relationships change in modern economies, IP rights are likely to play an even more valuable role.

However, few categories of intangible investment are reflected in company accounts, which may lead intangibles to be undervalued within both the firm context and within society overall. Workshop participants thus argued that greater efforts should be made to reflect intangible investment within accounting practices, particularly in order to ensure the necessary investment for growth and development in these areas. There is, in this regard, some evidence that firms backed by venture capital tend to place emphasis on IP rights, particularly patents.

Nonetheless, many of the same technological changes that have driven the growth of IP rights in certain sectors may raise more general challenges for the IP system as a whole, such as the growth of the digital economy. Accordingly, the purpose of the expert workshop was to examine various aspects of IP systems in light of those changes and the goals of innovation and economic growth.

- (ii) *IP rights operate, in effect, as an exchange between society and inventors or creators. Although rights-based approaches to authorship and innovation challenge the notion that IP is solely a question of economic efficiency, a degree of ‘give and take’ and a balancing of competing interests are inherent in every IP system. Given the technological and economic changes that have been occurring, it is sensible to examine how the ‘grand bargain’ struck by the IP system has been affected.*

The IP system operates as an exchange between society, on the one hand, and inventors and creators, on the other. This exchange, or ‘grand bargain’, involves, essentially, sacrificing short-term efficiency gains (through granting exclusive rights) in pursuit of longer-term dynamic efficiency in the form of

greater innovation and creativity. A sensible policy discussion regarding the optimal parameters and operation of the IP laws must, however, acknowledge the ‘give and take’ inherent in striking a balance between exclusive rights and the stimulation of creativity and innovation. This is particularly so insofar as a State grants such (time-limited) exclusive rights in order to encourage greater innovation and a competition of ideas in the longer term.

(iii) *The need for robust, independent empirical evidence to inform and underlie IP policy making was the overarching theme emerging from the workshop. Experts representing a diverse range of stakeholders, including rights holders, users, academics and government officials, acknowledged the utility of such evidence across all areas of IP considered in the workshop—patents, copyright and trade secrets. The panellists identified a lack of available data and uncertain funding as potential barriers to further research, although they also discussed a variety of potential data sources over the course of the workshop.*

The experts repeatedly emphasised the pivotal importance of robust, hard evidence on the use of IP rights and on the economic and social impacts of the IP system. There is actually relatively little concrete evidence available to support the assumption that IP rights encourage greater innovation and creativity. Most if not all participants, representing the views of a broad range of stakeholders, thus agreed that economic evidence is of vital relevance to IP policy makers: that is, IP policies should be based on facts not opinions. Although obtaining consistent and sufficiently detailed data has proven to be a barrier to such empirical research in the past, new data sources are emerging (including through innovative digital research techniques). There was, furthermore, some suggestion from panellists that government agencies might play a greater role, both in funding research but also in terms of collecting and making available relevant data.

(iv) *The rise of the Internet, in particular, is something of a double-edged sword for IP systems. In the context of copyright, greatly decreased distribution costs and ease of copying has created significant problems of piracy. Although many creative industries have responded with innovative distribution systems, there may nonetheless be a problem of falling returns, alongside the growth of intermediaries for content distribution. In the context of patents, however, digitisation and online availability have assisted in greater disclosure and dissemination of patent information, as well as information sharing between patent agencies in different jurisdictions.*

The rise of the Internet and the advent of digitisation have posed many challenges, but also created new opportunities, in the context of the IP system. Content producers that rely upon copyright have faced increasing problems of piracy, alongside new distribution and storage mechanisms that have, on the one hand, threatened traditional remuneration models, whilst on the other, created a significant disjunction between consumer expectations and the formal application of the copyright rules. Conversely, digitisation and the Internet have greatly facilitated the dissemination of information disclosed in patent applications, thus leading to greater knowledge diffusion. The availability of large quantities of data in online databases has also led to the emergence of text and data mining as a potentially powerful research technique. Its nexus with copyright law, however, may depend on the content and the end user’s licence. For this reason, at least one jurisdiction has introduced a separate copyright exception to facilitate third party use of certain types of compiled data for such purposes.

In sum, the digital revolution has had an immense effect on certain areas of the IP system, although the system itself has not always kept pace with the changes. In addressing these changes within the IP system, however, it is important to focus on developing the law to meet future challenges and not merely to address current problems.

- (v) *Further work may need to be done on the notion of the ‘IP bundle,’ that is, where a single firm utilises a variety of IP instruments to protect its business processes and products. Although in certain situations some forms of protection—such as patents and trade secrets—may operate as substitutes, they are mostly complementary; yet these instruments may overlap and interact, so one should perhaps be wary of considering such overlapping rights in isolation.*

Larger firms, in particular, often employ a wide variety of legal instruments and methods to protect businesses processes and products—both formal, such as IP rights, and informal, such as trade secrets. Although the workshop considered only certain discrete issues in IP, in practice there can be significant overlap and interaction between ostensibly distinct protection mechanisms. (The principle exception here is the relationship between patents and trade secrets, insofar as the disclosure requirement of the former is inherently at odds with the secrecy requirements of the latter.) To the extent that interactions within the IP bundle may have knock-on effects in terms of the operation of these mechanisms, this may be an area that merits further study.

### **Patents**

- (vi) *The ‘disclosure’ requirement is an integral element of the ‘grand bargain’ of the patent system: exclusivity is granted to inventors in the medium term in order to facilitate knowledge diffusion and further innovation in the longer term. The effectiveness of disclosure as a means of knowledge diffusion in practice, however, has been called into question. Empirical evidence presented at the workshop suggests that patent disclosures can have a positive impact on innovation, but the effects may vary between industries, and there is evidence that the quality of disclosure may be inadequate in some instances. Greater emphasis should thus be placed on the sufficiency of disclosure at the patent examination stage.*

Disclosure of patented technology is the *quid pro quo* for granting exclusive (but time-limited) rights under the patent system. The information disclosed ought to be sufficient to enable a person skilled in the art to replicate the relevant technology: one workshop participant went so far as to argue that the patent data disclosed ought to be seriously useful for follow-on innovation to justify the exclusive rights granted. The workshop devoted significant time to considering empirical evidence on the effectiveness of the disclosure requirement for patenting in practice. The evidence presented suggests that the extent to which patent information is consulted prior to follow-on innovation tends to vary between industries. It is also affected by factors such as whether the innovating firm itself holds patents or is venture-backed, both of which tend to increase the likelihood of consulting the patent literature.

Although the empirical evidence thus counters the prevailing academic view that patent disclosures have no positive effect on knowledge diffusion, the extent to which merely reading patents actually facilitates follow-on innovation remains uncertain. There is a danger, for instance, that patent information is used primarily for strategic rather than innovative purposes. From the evidence available, it is clear that many researchers question the value of information disclosed in patent applications on the basis that it does not actually enable the technology to be replicated. Although there are, ostensibly, fairly rigorous technical requirements regarding disclosure, some participants suggested that these disclosure obligations are not always applied rigorously at the patent examination stage. Further training of patent examiners might be required in this regard, alongside more innovative solutions such as peer review.

The workshop also gave some consideration to the 18 month secrecy period allowed from the filing of a patent to first publication. Some participants questioned the across-the-board nature of this 18 month period, querying why this duration is viewed as an appropriate time-period for secrecy in all industries and jurisdictions. Within certain rapidly moving sectors, the technology itself may become obsolete within 18

months. One participant thus suggested that the secrecy duration might be reduced, for instance, for university patent applications, where there is lesser public interest in protecting secrecy.

- (vii) *Disclosure, in the context of the patent system, involves not merely the provision of information in a patent application but also its wider dissemination. In this regard, the growth of the Internet has been especially beneficial in terms of making patent information available more cheaply and easily. Although developing countries may, unfortunately, lag behind in this regard due to a slower pace of digitisation, considerable work has been undertaken by WIPO to assist in greater knowledge diffusion at a local level in developing jurisdictions.*

Although the quality of information disclosed in patent applications might be questioned, dissemination of this information has improved greatly in recent years due to digitisation and online availability. Easily accessible research tools such as Google Scholar provide patent information, while many patent offices have now digitised their application processes and databases. Although developing countries may lag behind in this regard, WIPO provides considerable support to developing jurisdictions through its Technology and Innovation Support Center Program. To support the greatest diffusion of knowledge possible, several workshop participants suggested that patent information should be made available at marginal or minimal cost.

Furthermore, ease of access to digitised patent information is also of use to patent offices, particularly in terms of the sharing of information (for example, in relation to prior art) between different jurisdictions.

### **Trade Secrets**

- (viii) *Not formally a category of IP rights, trade secrecy as a means of protecting sensitive business information is nonetheless valued highly by firms, even at the expense of patenting where the latter would be available.*

In some situations, trade secrecy can be a substitute for patenting as a means of protecting business information. *Trade secrecy can also be used as a compliment to patent protection within a given IP portfolio.* To obtain the time-limited exclusive rights provided by patents, the applicant must disclose how to make and use the invention, while secrecy relies on non-disclosure to protect knowledge-based capital without any specific time limitation. The existing theoretical literature on the relationship between trade secrecy and patents is fairly inconclusive, while the empirical literature has tended to focus on firms rather than innovation. Nonetheless, there is some evidence that trade secrecy is valued more highly by firms than patents, although patenting propensity increases with a range of factors such as firm size, the possibility of reverse engineering, sales of the innovative product and in high-tech industries. While weak patent protection tends to push firms towards secrecy, it is not clear that trade secret enforcement enhances innovation or development in the aggregate.

### **Copyright**

- (ix) *The advent of the Internet and digitisation has had perhaps the greatest effect in the realm of copyright law. Piracy, radically altered distribution mechanisms, the rise of new intermediaries and the emergence of cloud computing, amongst other significant changes, all pose challenges to the conventional copyright model. Some workshop participants emphasised the need to take greater account of consumer expectations and fairness to end-users in this regard. The supply of creative works should not be taken for granted, either, with a need to retain sufficient incentives within the IP system to provide fair remuneration for content creators.*

Several panellists spoke about the need to realign the ambit of the copyright rules with legitimate expectations of users and consumers. Nowadays, many mainstream computing practices, such as cloud

storage and transferal of digital content between devices, may involve incidental infringements of the copyright rules. Although no one supported obviously infringing practices such as Internet piracy, some workshop participants contended that copyright law should not catch minor infringements that consumers do not understand to be violations of the law. In this regard, one participant spoke about the need for reform in order to avoid bringing the copyright laws further into disrepute in the eyes of the general public.

In recent years, much of the policy discussion surrounding copyright has focused on term extensions. There was broad agreement at the workshop, however, that a) this issue is of lesser importance as we look towards the future of copyright law, and b) term extensions are difficult to justify in economic terms. On the other hand, participants acknowledged the need to maintain the viability of the copyright system more generally to reward and incentivise content creation.

(x) *To address the challenges faced by the copyright system, the workshop considered two dichotomous solutions: either improving remuneration for use of copyrighted material, or expanding the exceptions and limitations to copyright. Discussions in relation to the latter focused on the various personal use exceptions, and potential expansion to a more generalised fair use exception. Participants were divided on the extent to which further exceptions to the copyright rules would be desirable, with arguments focusing on legal certainty and fairness to consumers, on the one hand, and fairness to rights holders, on the other.*

Copyright exceptions and limitations enable consumers to make use of copyrighted material without violating the copyright rules. These may arise due to exceptions within the law itself, exceptions mandated by other areas of law (such as competition or consumer law), or tolerance of technically infringing but *de minimis* conduct. Participants debated the acceptable scope of personal use exceptions, specifically whether they might extend to non-private uses. The workshop also considered whether the existing personal use exceptions ought to be expanded into a broader and more general fair use exception. Again, there was some debate regarding the extent to which the fair use concept, particularly as it has been interpreted in the US, is broadly coterminous with personal use exceptions. Nonetheless, many participants and delegates took the view, linked to consumer expectations, that a reasonable space should be created for personal use exceptions, although a number of participants, reflecting the interests of rights holders, argued that such use should be remunerated in some circumstances.

(xi) *In providing remuneration for use of copyrighted content within the digital context, there remains some debate as to whether levies or licences provide a more effective approach. Levies are favoured in certain jurisdictions, although these were criticised by some participants as operating irrationally. Innovative licences may provide a simpler and more acceptable solution in the future, but they face criticisms for being too fragmented at present. Collective rights management was, generally, seen as retaining a valuable role within the digital context, although some panellists emphasised the need for greater transparency.*

No clear consensus emerged as to whether levies or licences provide a better model for copyright remuneration in the digital environment. With respect to levies, some participants suggested that these might work most effectively when targeted at the most obviously problematic forms of primary copyright infringement. Such differentiation could be further facilitated, moreover, by technological innovation. As currently deployed, however, levies faced criticism as being akin to an arbitrary ‘tax’ on certain goods or services, without evidence of any resulting benefits in terms of innovation. Moreover, in jurisdictions that impose copyright levies, firms might become ‘addicted’ to such payments, so that any attempts to reform the copyright system may be met by further claims for compensation.

As for licences, these are viewed more favourably by content creators as a means by which to provide a sustainable income stream for digital and online activities. Yet, the current licencing systems face

considerable criticisms, on the basis of geographic fragmentation, undue complexity, and high transactions costs and delays. Establishing copyright exchanges may help to alleviate some of these problems, although experience with the UK’s Copyright Hub suggests that such projects can be difficult to realise. While there is probably a role for collective rights management within this structure, participants acknowledged, generally, the need for greater transparency and accountability on the part of collecting societies.

(xii) *Particularly in the context of copyright, there is scope for greater consumer education, to explain both the value of copyright to users and how it operates and limits the uses that can be made of copyrighted content. Conversely, some participants argued that greater emphasis should be placed upon the responsibility of those that sell copyrighted content to control its further uses, and less emphasis placed upon the ostensible liability of consumers and users.*

Many participants remarked that one of the difficulties of the existing system is that consumers fail to appreciate its value, both in terms of ensuring a supply of creative works and a means to provide fair remuneration for artists, most of whom are not famous and wealthy. Education may, therefore, have a valuable role to play in communicating the benefits and necessity of the copyright system. Many consumers, especially young consumers, may also fail to appreciate the extent to which the copyright system constrains the use of copyrighted content even where the consumer has purchased a copy of the material. Education may have a further role to play in delimiting more clearly the acceptable uses of copyrighted content.

By contrast, other participants suggested that undue responsibility for upholding the copyright rules might be placed at present on relatively uninformed and powerless end-users. To counter this unfairness, those participants argued, greater responsibility should lie with those who sell copyrighted material to ensure that the rules are ultimately respected.

(xiii) *Text and data mining (TDM) raises particular issues relating to copyright. Viewed as a promising means by which to both advance scientific and other research and to generate significant value for the wider economy, TDM may conflict with copyright insofar as it depends upon access to and extraction of data from large quantities of (often, proprietary) material. There is some evidence that researchers in certain jurisdictions (the EU and Brazil, for example) are inhibited from engaging in TDM due to fears of infringing copyright in the process. There are arguments both for and against crafting specific exemptions within the copyright rules to protect TDM, or relying on more general exemptions for fair use, while the scientific publishing industry argues that enhanced licensing arrangements facilitate TDM without any alteration of the existing copyright rules.*

TDM can be defined as the deployment of a set of continuously evolving research techniques which have become available as a result of widely distributed access to massive networked computing power and exponentially increasing digital data sets, enabling almost anyone who has the right skills and access to assemble vast quantities of data, whether as text, numbers, images or in any other form, and to explore that data in search of new insights and knowledge.

The workshop highlighted the potential future importance of data analytics as a means by which to generate both scientific knowledge and economic benefit, and also the consequent need to ensure that the existing IP laws, particularly, copyright, do not prevent or inhibit innovation in this regard. There was evidence that some non-European jurisdictions, particularly the US and the People’s Republic of China, are considerably more advanced in this field than in Europe, although these claims were disputed. Despite its potential benefits, TDM involves a balancing of interests between researchers and the broader interests of society, on the one hand, and copyright holders, on the other. TDM may also raise certain data privacy issues, although the workshop did not consider these aspects in detail in the discussion.

## Summary of Discussion

### *Experts*

Olivier Bomsel, *MINES ParisTech*

Ahmed Bounfour, *Université Paris Sud*

David Carson, *IFPI*

Tony Clayton, *Intellectual Property Office (UK)*

Sergey Filippov, *The Lisbon Council*

Stuart Graham, *Georgia Institute of Technology*

Bronwyn Hall, *University of Maastricht & University of California at Berkeley*

Ian Hargreaves, *University of Cardiff*

Lisa Larrimore Ouellette, *Yale Law School*

Frances Lowe, *PRS for Music*

Jeremy Malcolm, *Electronic Frontier Foundation*

Cédric Manara, *Google*

Tomoko Miyamoto, *World Intellectual Property Organisation (WIPO)*

Pedro Mizukami, *Fundação Getulio Vargas Law School*

Carlo Scollo Lavizzari, *Lenz Caemmerer Attorneys*

Samsung Xiaoxiang Shi, *East China University of Political Science and Law*

Sacha Wunsch-Vincent, *WIPO*

### *Moderators*

Dominique Guellec, *OECD*

Douglas Lippoldt, *OECD*

Christian Reimsbach-Kounatze, *OECD*

Piotr Strykowski, *OECD*

Jeremy West, *OECD*

The expert workshop on intellectual property (IP) opened with introductory remarks by Dirk Pilat (OECD), who explained that it formed part of a broader OECD project exploring knowledge-based capital (KBC), also known as intangible assets. The workshop was intended to provide a forum for the exchange of expert views on a range of issues regarding the future of IP, particularly aspects that may relate to KBC. The objectives were thus to gather evidence and facilitate dialogue and knowledge exchange, rather than to arrive at prescriptive conclusions as such. Any views expressed at the workshop, moreover, were those of the expert panellists rather than the OECD or its member countries.

Jeremy West (OECD) provided further background on the KBC project as it related to IP. Now in its second phase (KBC2), the project was looking in detail at five IP-related topics, namely: copyright in the digital era; open science and open data; design rights; the economic and technical value of patents; and trade secrets. This workshop was designed to explore other IP issues that complement those five topics. The overarching theme of the KBC2 work on IP was pervasive change—resulting, for example, from globalisation, digitisation, the growth of the Internet and open science—and the potential implications for IP use and frameworks.

### ***Session One: Introduction to the IP Exchange***

The session Moderator, Dominique Guellec (OECD), introduced the first session exploring the theory and practice of the ‘IP exchange,’ that is, the balance of rights and duties between IP rights holders and society more generally. This question can, first of all, be considered from a moral standpoint. Thus, one might argue, echoing the work of John Locke, that creators should be entitled to ownership of their creative works. The symmetrical but converse viewpoint would argue that all contemporary creators stand on the shoulders of past giants, and thus should not be entitled to claim exclusive ownership of work that depends heavily on the prior creativity of others. Alternatively, the question can be considered from an economic standpoint, asking, more pragmatically, whether IP is useful or not. On the one hand, IP regimes may provide incentives for beneficial risk-taking, so that restrictions on competition are necessary to compensate inventors. On the other hand, where competition is limited society loses out in other ways. Accordingly, the optimal solution is not immediately obvious from either a moral or an economic standpoint, and indeed different issues may require a different balance to be struck.

Tony Clayton, UK Intellectual Property Office, focused on the underlying incentives within the IP system, what they are intended to achieve, and the extent to which they work in practice. Citing the intellectual property clause of the US Constitution (Art. 1, section 8), which mirrors earlier UK law, he argued that IP law has both economic and social objectives. At its core, IP is about both creation and application of new ideas. The temporary right to exclude is granted as a means to incentivise innovation, so that, to the extent that IP policies fail to result in the creation and use of new ideas, they cannot be justified. Moreover, the emphasis is upon competition between ideas, not within ideas. The economic incentives provided by the IP system relate to the entire value chain: from inventors and authors, to ‘second movers’ that help to diffuse innovations, to distributors and intermediate users of innovative products and processes. The incentives particularly extend to open innovation partners, who need to be aware of which rights can be used in an increasingly important economy of knowledge exchange.

Recent years have seen a significant increase in levels of investment in intangible assets. IP rights are available to protect investment in certain categories of intangibles, including software (in the US and Japan), creative works, research and development (R&D), reputation and branding and designs, whereas other categories fall outside the ambit of IP, including business organisation and processes, and workplace skills. Few if any of these investments tend to be reflected within a company’s balance sheet, but some appear as investment in national accounts. Evidence from the UK indicates that, in the past two decades, there has been a notable shift from tangible to intangible investment, a trend that is also found in other countries.

Considerable effort has been expended marshalling data to determine the impact of IP rights on economic performance. There is evidence that patent and trademark ownership results in faster firm growth, greater innovation and the creation of better jobs (Hall et al., 2012); that patent owners lead ‘new to market’ innovation and that licensees make significant contributions to R&D (Arora & Athreye, 2012); and that patent disclosure and licensing helps knowledge diffusion (Graham et al., 2010). The evidence is weaker with respect to design rights (Bascavusoglu-Moreau & Tether, 2011), although the design sector in the UK remains successful despite the apparent lack of performance impact from registered IP protection. Similarly, certain aspects of the copyright system appear to work poorly at present. Copyright levies, imposed in certain European countries, are very varied and even irrational in their application. Copyright term extensions have no incentive impact, and raise distributional concerns. Licensing rules and procedures have struggled to keep pace with evolving technologies. Moreover, there is evidence that a significant number of consumers, newly exposed to the IP system, are unconvinced by it and that their behaviour is uninfluenced by knowledge of the law. Perhaps counter-intuitively, significant groups of consumers who choose to infringe copyright tend to spend more on copyrighted materials than those who do not break the law.

In an evolving world, the current IP framework faces a variety of challenges. There are, for example, difficulties of existing patent complexity and quality. These include problems of patent thickets and patent trolls, the strategic drafting of ‘thesaurus patents’ that use opaque or evasive language to claim unjustified rights, and the continuing high costs of patent litigation. Digital transformation has radically altered the economics of copyright, insofar as reproduction and distribution costs have almost vanished, access to copyrighted material is instantaneous, and barriers to entry are significantly reduced. The Hargreaves Review of IP in the UK concluded that where IP laws do not adapt to new technologies and marketplaces they could obstruct innovation and economic growth. While the principles underpinning the IP system remain sound, its practice needs to evolve with the changing landscape. In response to the Hargreaves Review, the UK is making numerous changes to its copyright system, including an orphan works licensing system, and enabling text and data mining, private copying, archiving and parody through exceptions. It has also promoted the ‘UK Copyright Hub,’ a business-led project to create a digital exchange that provides information about copyright ownership, access and licensing to facilitate efficient transactions.

In concluding, Mr Clayton stressed the need for data on the impact and effectiveness of IP protections, in order to inform and shape IP policy making, as well as efficient use of IP. The big question will be how investment in intangibles is to be financed. Although intangible assets now eclipse fixed assets in spending and in enterprise value, these are often not reflected in company accounts, and are usually valued by banks at zero in loan assessment. There must be a greater connection between intangible investments and the financial markets to enable necessary investment. At present, a large amount of ignorance exists regarding the value of IP.

Ahmed Bounfour, University Paris-Sud, spoke about his research on the topic of ‘hard intangibles,’ including IP rights. Intangible assets are an important source of innovation and growth. The conventional view of economic activity focuses on organisational settings that are relatively stable in space and time, typically the firm. Yet, in reality, economic activity is undergoing deep transformation at present, with new production systems and arrangements emerging outside the traditional boundaries of the firm. It is necessary to understand the role of IP rights specifically in this context.

Professor Bounfour provided economic data from a variety of European countries that indicates that certain IP rights contribute substantially to economic growth with, furthermore, a clear correlation between the growth of intangibles and GDP. Hard intangibles are an important ingredient for innovation, too. More specifically, patents are directly related to process and product innovation, including a correlation to the percentage of income derived from innovation. In terms of the relationship to turnover, there is greater correlation between trademarks and revenues.

The most important issue for the future is the relationship between different types of intangible assets held by a firm. Examining bundles of intangibles, Professor Bounfour’s research identified a degree of complementarity between patents and R&D, and between trademarks and marketing. By contrast, there is a much weaker relationship between skilled labour and design rights.

Society now embraces many different sources of innovation, making it necessary to consider how business models must change as we move towards a model based on the accelerated production of links. Recent work on digital innovation suggests that the emerging business model is a generative digital platform, which leads to new forms of innovation (Zhang et al., 2012). This model, which is dynamic in nature and occurs outside the conventional firm structure, contrasts with the traditional fixed enterprise model. Outside the lean production space, which incorporates the conventional trio of suppliers, clients and the enterprise itself, large companies now must manage all the resource factors that exist between society—such as mobility, social networks, and the private time of collaborators—and competitors, complementors and platforms. This is, understandably, an increasingly complex and challenging task for company managers. A new production model is emerging: the accelution<sup>465</sup> model.

Professor Bounfour then discussed the implications for public policy that follow from this shifting landscape. Mapping is important in order to generate a typology of intangibles and related IP rights. Within the conventional transaction regime, there are proprietary intangibles for traditional firms and public organisations, individuals, and entrepreneurs, and joint intangibles in platformic firms and organisations. Within the community regime, there are joint community intangibles and individual proprietary intangibles for constrained communities. In terms of IP rights, the transaction regime includes exclusive IP rights for public organisations, firms, individuals, entrepreneur and platformic rights, whereas the community regime encompasses both joint and community IP rights. There is a need to integrate the emerging temporal, platformic, community and ‘big data’ dimensions into IP regimes, to define policy instruments for building and leveraging individual assets, and to provide support for funding mechanisms for innovative intangibles.

The panellists then addressed questions from the floor. In response to questions from Israel, Switzerland and BIAC regarding the quality and measurement of investment in intangibles, Mr Clayton explained that measuring even the quantity of intangible investment is difficult, let alone the quality of such investment. While there are proxies available for intangible investment—such as counting the number of knowledge works created, or the number of researchers involved in R&D—there remains an observation bias to the extent that many intangible assets are unreported in company accounts. The best way to counter this is by recognising that intangible assets are essentially capitalised labour, although this is difficult to achieve in practice. Professor Bounfour agreed that there is little information available on the quality of intangible investment. Moreover, the quality of the data available more generally is problematic, providing a patchwork of information rather than a systematic account. There is scope for a research project that aims to reformulate how company accounts are devised so that they give greater weight to intangible assets. Non-IP intangible assets are also important in this regard.

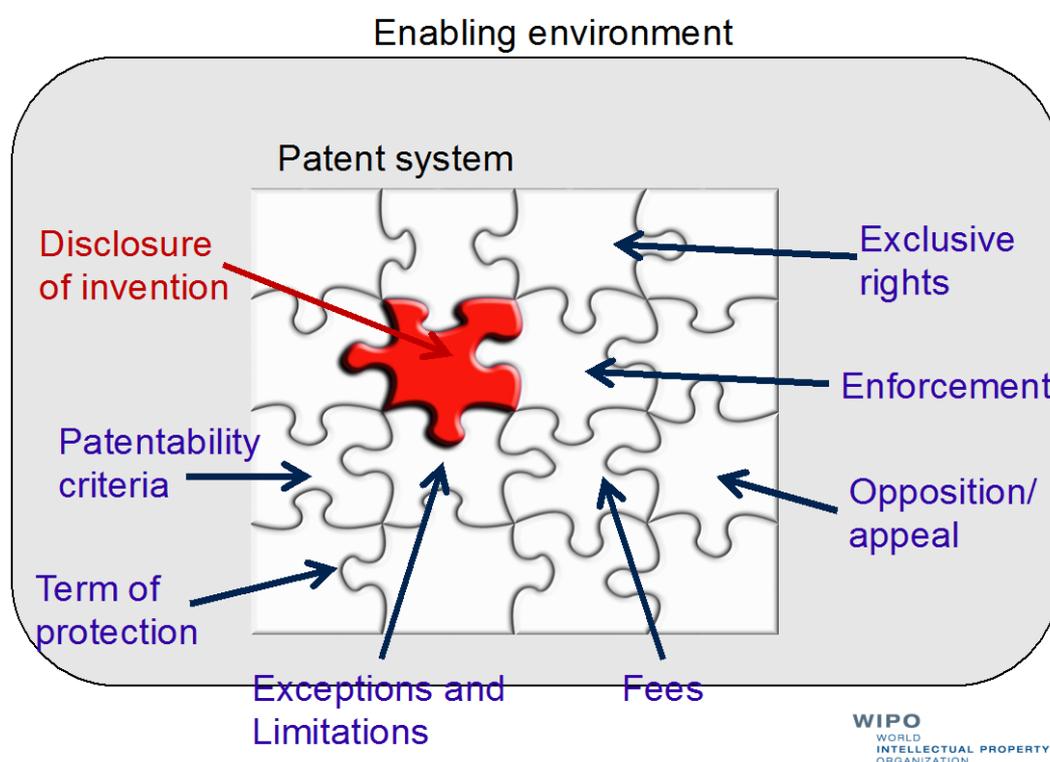
Dr Guellec mentioned that the increasing quantity of intangible assets within modern economies has the potential to destabilise the existing balance of the IP framework. There is also an evident degree of complementarity between different types of IP. It may, accordingly, be inadvisable to deal with different types of IP rights in isolation, insofar as there may be knock-on effects in other areas.

**Session Two: How Is the IP Exchange Working Out in Practice?**

*Do the Disclosures in Patent Filings Lead to Knowledge Diffusion?*

Tomoko Miyamoto, WIPO, began by explaining the orthodox view of patents as a two-way system: exclusive patent rights are granted, but with a quid pro quo of knowledge diffusion. This model is clear, concise and convenient. Yet the knowledge diffused through the patent system comprises more than what is in the filing, and such diffusion is only one piece of the ‘jigsaw’ of elements that frame the overall system. Other components include the patentability criteria, exceptions and limitations, the appeals process, enforcement, the term of protection, and fees. A wide breadth of information can be contained in patent applications, covering technical, legal, business and policy information. The average application is thus of different use to different audiences, for example, to researchers, potential licensees, competitors, policy makers, or patent examiners. All potential recipients of patent information are important in contributing to innovation and society’s gain as a result.

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Two aspects of the knowledge diffusion process are of particular importance: *disclosure* (the information that is revealed) and *dissemination* (the accessibility of that information). Disclosure should enable third parties to use patented inventions once the patent has expired. It should thus allow a ‘person skilled in the art’ to understand how the invention works, be inspired and, potentially, make improvements. To achieve this, patent systems incorporate the requirement of enablement. Second, inventors are rewarded for what they invent but no more; what is known as commensuration. Accordingly, there are support and fair basis requirements, alongside the need for a written description. Overly broad or speculative claims are rejected, although the inherently ambiguous nature of many biotech products has led to specific challenges in this area. Third, the best mode requirement mandates that patentees should not conceal their preferred embodiment of the patented invention. Finally, the scope of protection must be clearly demarcated, such

that claims must be clear and concise. Various iterations of these principles can be found within national patents systems, and within TRIPS.

In terms of accessibility of patent information, there is an increasing degree of standardisation across different systems. This is achieved by use of standardised forms and alignment of the format of patent information, plus the impact of digitisation including the development of IT tools. Patent information is usually held by public institutions (patent offices), which should promote accessibility and use of such information within the public domain. Ideally, access should be provided at marginal cost; where patent information is digitised the costs of access are likely to be low, although limited digitisation and publication of information made it more difficult to access patent information in developing countries. Where no patent exists (for example, the application is rejected) or it has expired, the recipient may freely use that information for commercial purposes. If a patent remains in force, commercial utilisation would require the patentee’s consent and the patentee may require royalties. Even in the latter situation, nevertheless, knowledge has been transferred through disclosure. Certain challenges to greater accessibility of patent information exist, however. These include strategic behaviour by patentees, such as patent thickets or drafting techniques to blur the contents of a patent application. Particular difficulties arise in developing countries, including an absence of infrastructure for access to patent information, and a lack of professional intermediaries that assist in patent literacy.

The WIPO Technology and Innovation Support Center Program assists developing countries in establishing local centres that provide databases of patent information. Two examples of its work were discussed, relating to printing ink and pesticides derived from organic materials. In both instances, diffusion of patent information led to follow-on innovation by local companies, thus demonstrating the practical effectiveness of diffusion. WIPO has also created an information platform called WIPO Re:Search, which enables universities and firms to share technologies, patents and know-how for research and development for neglected tropical diseases, tuberculosis, and malaria, thus facilitating knowledge sharing between the public and private sectors.

Ms Miyamoto concluded by noting that, although patents provide access to considerable amounts of innovative knowledge, other relevant information often lies outside the patent disclosure, such as design data or know-how. A delegate from the United States asked whether it is possible to enable digital sharing of prior art between patent offices. Ms Miyamoto confirmed that this is now occurring as greater numbers of patent applications are digitised and made available online, including patent information from developing countries. As greater information exchanges between patent offices takes place, the quality of patents should improve.

Stuart Graham, Georgia Institute of Technology, then provided empirical data on the value and use of patented information from his forthcoming paper “The Disclosure Function of Patents: Empirical Evidence from Firms.” The disclosure of technical information is part of the ‘grand bargain’ of the patent system, that is, that inventors are offered periods of limited monopoly over the use of their inventions in exchange for disclosure. In addition, society benefits since – while it suffers losses associated with static inefficiency in the short term – it gains dynamic efficiency in the form of a supply of invention in the longer term. It is thus necessary to consider both the incentive effects and the disclosure effects of the patent system, with the latter allowing for cumulative innovation and a reduction in wasteful duplicative investment.

The general view among legal scholars is that patents provide poor information content to innovators. In the US, there is concern that providing additional damages for ‘wilful infringement’ deters patent reading (Bessen & Maurer, 2008). Criticism of the information content of patents has been particularly strong in the software area, where it is claimed that patents contain little useful information and are not consulted by inventors (Mann, 2005; Klemens, 2008; Devlin, 2010). There is, however, prior empirical evidence to the contrary. This includes an EPO report from 1995, which found that, although patent

awareness was greater among larger firms, about 21% of all firms relied upon patent information, regardless of size, rising to 54% among firms that have applied for patents. Similar results have been produced in other work conducted in Europe (Arundel & Steinmueller, 1998; Hall et al., 1999), and there is some prior evidence from the US that patent disclosure information is consulted and relevant for some innovation (Cockburn & Henderson, 2003; Cohen et al., 2002).

Professor Graham has, with collaborators, generated recent empirical data on this topic, the Berkeley Patent Survey, and is in the process of analysing it. The Survey was administered to young US technology firms in the biotech, medical devices, IT hardware and IT software/internet sectors. About 1,300 firms responded, typically at a high-level, e.g. CEOs and CTOs. Participants were asked whether they checked patent literature when innovating, and if so, at what point. The responses show that patent information is consulted, although the degree differs significantly between groups of respondents. Venture-backed firms consult such information more regularly and certain sectors—biotech and medical devices—make greater use of patent information than others, particularly compared with software and Internet start-ups, which tend to use it less often.

If firms consult patent literature, they tend to do so relatively early in the innovation process, either at the design stage or beforehand. While firms that are, themselves, patent holders are more likely to check the literature, some firms that own no patents also do so, and, again, this varies between sectors. Taking a closer look at venture-backed firms, a similar pattern emerges.

Accordingly, the Berkeley Patent Survey does not support the view that innovators do not use patent disclosures. Professor Graham noted that, in future research, it would be useful to investigate the performance implications of reading, and to consider whether reading patents can be separated from reading patent information.

In response to a question from a Canadian delegate regarding the impact of copyright on a firm’s likelihood of consulting the patent literature, Professor Graham noted that among the firms he surveyed, copyright is most significant in software where it may function as a substitute for other IP protections. Software firms may therefore be less likely to consult the patent literature because they are less likely to be involved in the patenting process. The delegate then asked whether the patent literature is read for strategic as opposed to purely innovative reasons. Professor Graham replied that it was impossible to answer that question from the Survey, although it may be possible to use as a proxy the firm’s reasons for patenting. Responding to a question regarding the high correlation between venture capital and patents, he noted that venture-backed firms hold more patents than other firms, and suggested that this might be attributable to enthusiasm for patents among the investors, which may of course also be in their economic interest.

Lisa Larrimore Ouellette, Yale Law School, provided a complementary presentation of her empirical research into the use of patent information in the field of nanotechnology. She noted the dichotomous viewpoints of US jurists and legal scholars on the question of whether disclosure leads to innovation. While the Supreme Court insists that disclosure facilitating technological progress is the underlying rationale for the patent system, prominent legal scholars insist that disclosure is ineffective and irrelevant for the purpose of innovation. Prior empirical research has suggested that the answer to the question whether scientists learn anything from disclosure is, in essence, “sometimes” (Cohen et al., 2002; Hall et al., 1999; Cockburn & Henderson, 2003; Walsh & Nagoaka, 2009; Graham et al., 2010).

Professor Ouellette surveyed authors of nanotech publications and nanotech researchers listed on corporate websites. There were about 200 respondents. Nanotechnology is an academic field, so the majority of respondents were working within academia, and 59% of respondents had submitted a patent application within the preceding two years. The good news is that 64% of respondents had read a patent, that 60% of those reading patents for scientific (i.e. non-legal) reasons said that they had found useful

technical information, and that almost no respondents were concerned about claims of wilful infringement as a deterrent to reading patents. Accordingly, the survey indicates that patent disclosures are not useless, insofar as some scientists get some value from the information disclosed.

The less positive news, however, is that 36% of respondents had never read a patent, that 40% of those who read patents for technical reasons did not find useful information, and that 62% of readers thought that the patents they read did not provide sufficient disclosure for a nanotech researcher to recreate the invention. Accordingly, the survey indicates that the quality of disclosure could be improved significantly, and raises a question as to whether many patents actually meet the existing ‘enablement’ requirements.

The survey also provided qualitative evidence about the use and value of disclosure. Some respondents indicated that patents could be useful to show how a device works, to put ideas and research in context, to avoid duplication of work, to provide access to protocols not found in other published literature, or to provide access to a more reliable or reproducible description of new technology than found in scientific papers. Conversely, others noted that the language of patents could be obscure, that patent descriptions do not go through the same level of critical review as scientific articles, that patents may merely duplicate information already available in the scientific literature, that the long time delay to publication means that patents are less useful in rapidly moving fields like nanotech, and that many scientists find patent literature to be unduly legalistic rather than scientifically-oriented.

The nanotech survey suggests that patent disclosure can and does provide valuable information to scientists. The emphasis should thus be on how to improve the value of such disclosures without detracting from other aspects of the patent system. Professor Ouellette spoke about her own experience as a PhD researcher, during which time she did not consult the patent literature but subsequently discovered that information relevant to her research was available. As the law stands currently, there are no incentives for inventors to disclose more than the minimum required. Anecdotally, patents examiners are reluctant to focus on the enablement requirement, often preferring to invalidate or refuse a patent on another, less technical ground.

In response to a question regarding the utility of patent applications versus issued patents, Professor Ouellette questioned whether there is a difference in terms of value for scientists. Many survey respondents might not even be aware of the difference in legal terms. Google Scholar, for example, includes both issued patents and patent applications. In response to a question from a Swiss delegate regarding the disinclination of patent examiners to probe the enablement requirement, she explained that there are problems with both the current legal standards, and with the fact that those standards are not met. In patent litigation, issues like novelty are much easier to assess than disclosure. Mr Clayton remarked that a semantic analysis of US patents might be useful, insofar as one problem in this field is that existing patents are simply reformulated in order to obtain additional protections. Professor Graham added that, in a fast-moving field like nanotech where inventors work at the frontiers of knowledge, it would be particularly useful to have an effective means of disclosing technical information.

Professor Bronwyn Hall, University of Maastricht and University of California at Berkeley, noted the degree of heterogeneity in studies about the utility of patent disclosures, across both technologies and time. As access to patent literature becomes easier, greater numbers of researchers consult such information. Another factor that can influence the survey results is the identity of respondents, whether they are researchers or executives. Professor Ouellette agreed that the earlier literature cited a lack of access to patent information as a significant barrier to disclosure, and thus the prospect of online access to patent literature is greeted with considerable enthusiasm.

Dr Guellec then asked whether a patent applicant might choose to maximise disclosure, particularly if it anticipated subsequent litigation. Professor Graham noted that a popular strategy is to argue initially, before the patent examiner, that the language sought is narrowly defined, but then to argue subsequently, during litigation, that it has a broad ambit. Evidence from other work by Professor Graham on US patentees (Graham and Hegde, 2012) indicates that applicants that opt-out of disclosure at 18 months tend to have the lowest quality patents, while disclosure also appears to increase licensing opportunities for the patented technology (Hegde and Luo, 2012). So there is ambiguity, but there is also evidence that disclosure leads to economic benefit, both for patent holders and the innovation system more generally. In response to a comment from a US delegate that raised the possibility that all US patent applications not seeking foreign rights would opt to maintain secrecy after the 18-month stage, Professor Graham pointed to his work with Hegde, which showed that about 85% of such US applications are being allowed to publish at 18 months. Graham noted again that the US patents issuing after secrecy show indicators of consistently lower value, raising the question of what society is getting from this extra secrecy. Professor Graham also suggested that his research raises the question of why 18 months is the international standard period of pre-publication secrecy for patent applications, and whether it is really the optimal duration of secrecy across all jurisdictions, applicants, and sectors.

In response to a question regarding cross-country differences, Ms Miyamoto noted that many of the legal provisions at issue are similar across different jurisdictions. Nonetheless, anecdotally, when patent applications relating to the same technology are filed in different jurisdictions, the patents granted may differ significantly, suggesting that some patent examiners require more of applicants than others. Professor Ouellette added that differences can also arise with respect to the type of applicant; a good deal of patenting is now done by universities, which have different incentives, and arguably have less need for secrecy.

### *Trade Secrets versus Patents*

Moderator Douglas Lippoldt (OECD) introduced the panel on trade secrets, a type of protection that has ancient origins relating to notions of fairness. TRIPS provides a starting point as the primary multilateral accord, but, although it defines what can be protected and when, it does not define *how* such protection is to be achieved. Given the lack of definition, countries use a broad range of approaches to effect protection for trade secrets. Recent work by the OECD has considered the variety of ways in which trade secrets are protected, developing a taxonomy of 37 dimensions of protection in 21 countries, while on-going work broadens the scope of this investigation.

Professor Hall then spoke on the topic of trade secrets in comparison with patents. She noted that trade secret protections are not a body of administrative law as such, but rather comprise a multitude of different approaches across different jurisdictions. Her presentation aimed to provide an overview of research on this topic to date, and to talk more closely about work that she has conducted in the context of the UK.

Firms that invest in innovation face a problem of securing returns to their investment in the face of imitation by competitors: the appropriability problem. To counter this, a range of protections are available, both formal (registered and unregistered IP) and informal (alternatives such as trade secrets). Such protections usually function as complements and can be used together. In the case of patents and trade secrets, however, the disclosure requirement of the former means that these protections are substitutes. Academic views differ as to whether patents or trade secrets are more attractive to inventors. There is also considerable anecdotal evidence that trade secrets can be worth substantial amounts, insofar as violation can lead to large damages actions or settlements. The IP system aims to provide *ex ante* incentives for innovation in exchange for disclosure; thus, questions arise as to how important the knowledge spill-overs

generated by the system are for future innovation, and why firms choose secrecy when patent protection is available.

Professor Hall discussed the differences between patents and secrecy. Patenting requires disclosure of codifiable but not tacit knowledge, whereas secrecy requires disclosure of neither. A patented invention can be delimited more easily, but cannot lawfully be reverse-engineered, unlike inventions protected by trade secrets. The subject matter of a patent is defined by statute, whereas trade secrecy is broader. Patents are obtained after innovation, whereas secrecy may protect work-in-progress. Patents are available for both product and process inventions, whereas secrecy is more readily available for process innovations. Patents last for 20 years, whereas secrecy can potentially last longer. Finally, patents are more expensive to obtain, although the cost of secrecy is not zero, and enforcement is expensive in both cases.

An on-going study that involves research partners in the EU, US and Japan is considering the cost-savings that arise from reading patents: the results obtained thus far are heterogeneous across and even within sectors (Harhoff et al., 2011). Patents are important to innovation in the organic chemistry, pharmaceutical, polymers and materials chemistry sectors, but less important in sectors like telecommunications, IT and electro-technical. The importance of access to patent literature also varies between sectors along similar lines. Data from the UK and the US, moreover, indicates that within both jurisdictions secrecy is considered more valuable than patenting to protect inventions.

In theory, the costs of patenting include direct and indirect financial expenses; the obligation of disclosure; and uncertainty about whether it will be granted and whether it can be enforced. The potential benefits of patenting include exclusion of competitors from proprietary technology; licensing income; the ability to block competitors; quality signalling, which may help to secure potential collaborators or funding/financing; deterrence of infringement suits; and increased bargaining power in cross-licensing negotiations.

The costs of secrecy include direct and indirect financial expenditure; the need to maintain internal secrecy policy and confidentiality agreements; and uncertain and difficult enforcement. Conversely, the benefits of secrecy include potentially indefinite protection; applicability across all technologies; a broader scope of protection to include e.g. customer lists; and applicability to work-in-progress.

The theoretical literature on the relationship between patents and secrecy is in its infancy, and points to the complexity of the underlying issues (Horstmann et al., 1985; Anton & Yao, 1994; Kultti et al., 2006; Scotchmer & Green, 1990; Ponce, 2007; Schneider, 2008; Zaby, 2010). Results to date are mixed and depend upon the nature of competition and whether the lead innovator is far ahead. The accuracy of such models is challenging to evaluate; they sometimes struggle to account for the real world experience of innovation and generally depend upon an (unrealistic) ‘one product one patent’ model, so that matching the results to empirical data is difficult.

The existing empirical literature – comprising mainly survey evidence on patent/secrecy use, cross-country comparisons between different systems, measuring impact on performance and diffusion, and natural historical experiments – has problems, too (Levin et al., 1987; Cohen et al., 2000). There is a problem of observability: while patenting is obvious, it is difficult to assess secrecy otherwise than by asking firms, and often the responses obtained provide little information. In general, the available evidence suggests that firms prefer trade secrecy or lead time (‘first to market’) strategies over patenting, although, again, this differs by industry. The chemicals industry, for example, prefers patents, which relate to products rather than processes.

Professor Hall then discussed the Community Innovation Survey (CIS) and associated literature, which highlights factors that affect propensity to patent or use secrecy (Brouwer & Kleinknecht, 1999;

Arundel, 2001; Pajak, 2009; Heger & Zaby, 2010; Hussinger, 2006; Hall et al., 2014). Patenting propensity increases with firm size, sales of innovative products, R&D collaboration agreements, in high-tech industries, in situations where inventions are characterised by a smaller inventive step, and where reverse engineering is more straightforward. The propensity to rely upon secrecy, by contrast, tends to diminish with firm size for product innovations, in high-tech sectors and where firms are part of multi-national corporations. An historical study by Petra Moser compared a selection of inventions, presented at two world fairs in the nineteenth century, which originated in countries that did and did not have patent systems at the time (Moser, 2005). Her findings demonstrate that the existence of a patent system did not affect the rate of innovation, but where a system did not allow patenting, firms tended to use secrecy. The absence of patents affected the industrial distribution of innovative activity, however, as countries without patent systems concentrated on industries where secrecy was more effective, such as textiles and food processing.

The existing empirical evidence on firm performance is fairly weak (Hanel, 2002; Hussinger, 2006; Hall et al., 2014). Little work has been done on this topic due to the data challenges, namely the fact that use of secrecy cannot be observed. The existing litigation data is highly selective, making it difficult to draw strong conclusions. The damages available in secrecy cases tend to be lower than in patent infringement cases, which may be explained by the fact that trade secrecy cases are usually against former employees (Lerner, 2010; Almeling et al., 2010).

Professor Hall concluded by noting the existing theoretical literature is inconclusive, while the empirical literature suffers from a focus at firm level rather than at invention level. From the available evidence, it is clear that sectors where patents are considered important are also those where reading patents tends to save time, which suggests that knowledge spill-overs are enhanced. Trade secret enforcement is largely directed at former employees and, while strengthening such protection is generally positive for incumbent firms, it may not enhance innovation or development in the aggregate. Conversely, weakening patent protection tends to push firms towards secrecy.

#### *Copyright and Exceptions for Personal Use: Consumers and Digital Context*

Introducing the next session, Moderator Piotr Stryszowski (OECD) explained that copyright has been impacted profoundly by digital innovation. A critical question is whether and when private use that involves copying is permissible. Jeremy Malcolm, Electronic Frontier Foundation (EFF), began by noting that copyright has never covered *all* uses of creative works, although the range of uses covered has expanded over time, from reproduction to adaptation, public performance, broadcasting and making available copyrighted works. Nevertheless, certain uses of copyrighted material remain permissible as personal use rights. Some personal use rights come from copyright law itself, as limitations or exceptions, or where licences are granted gratuitously, implicitly or compulsorily. Other such rights are supported by other sources of law (such as competition law, consumer law or international human rights law), or due to tolerance of technically infringing uses (such as forwarding emails, or where the breach is *de minimis*). The concept of ‘personal use’ is not limited to individual use, nor to private use, nor non-commercial use. Moreover, personal use is not always transformative, so, for example, backing up a computer is not transformative as such. The range of potential personal uses is undergoing rapid evolution at present.

The concept of ‘fair use’ is a more flexible standard that may provide an alternative to the rapidly evolving concept of ‘personal use’. Fair use is broader than personal use, and may add much needed flexibility to existing rules. Fair use-style copyright exceptions have been adopted or considered in an increasing number of jurisdictions (e.g. Israel, Singapore, Korea, Australia), although opposition is also mounting. The inherent uncertainty of the fair use exception, however, means that it must be paired with more specific or concrete rights to assist application. Considering the differences between personal use and fair use, Dr Malcolm noted that the latter exists as an exception to copyright whereas the former has a broader range of sources extending beyond the copyright rules. Some personal uses exist in every country,

whereas the fair use exception is not found in every system. Some personal uses are not fair uses, and some fair uses are not personal uses (e.g. big data). Finally, some personal uses may be remunerated, whereas fair use is not remunerated. EFF takes the view that there is no justification for compensation of personal uses when there is a broader public interest in allowing those uses freely.

The differences in opinion that exist regarding the optimal scope of copyright have their origins, essentially, in philosophical differences about creative work and rights. Under the *rights-holder model*, creation is viewed as authorship. Strong rights of authorship are the default position, while personal use and public domain rights are minimised. Private copying is a loss for authors, while uncompensated sharing is akin to theft. Conversely, under the *consumer model*, both consumers and creators are seen to benefit from unremunerated use. Access and personal use are the default, while copyright should be limited and tightly circumscribed. Furthermore, there is no assumption that copying results in damage to authors.

Nowadays, personal use exceptions are under threat, due to the shift to distribution of digital content based on access rather than physical control, and given that acts of technical copying are involved to view, enjoy or modify that content. Decisions regarding how much usage is fair or personal—for example, questions about where digital products and services can be accessed, from how many devices, from whom such products and services can be acquired, and to what uses these can be put—are being taken away from consumers. Increasingly, instead, such decisions involve the rights-holder through legal and technical means, and through intermediaries.

Technical limits on personal use exceptions include digital locks to prevent copying or sharing, access controls such as geo-location, and remote device updating. Legal limits include efforts to extend the definition and criminalisation of commercial use (such as the US’s No Electronic Theft Act), and small print in licence agreements that negates personal uses that the law otherwise allows. Intermediary activity includes the seizure of Internet domain names, spurious content removal and censorship, and misuse of power by payment intermediaries against alleged infringers. Finally, as an example of lawful personal uses that are constrained by technology, Dr Malcolm mentioned DVD region coding, which limits the use that can be made of lawfully acquired copyrighted material.

David Carson, International Federation of the Phonographic Industry, began his presentation by observing that the underlying assumption that copyright encompasses a balanced exchange between rights holders and society is not universally accepted. This characterisation may be accurate in common law systems where a balancing of economic and social arguments is accepted. In other countries, however, copyright is a fundamental right of authors. Society is better off when it protects creative works, so that to weaken copyright actually harms society. Copyright is thus not an option as such, but rather a necessity within any society that values culture. Nevertheless, and regardless of the underpinnings of any particular copyright regime, it is relevant to ask whether society is better off when it protects creative works. Since society benefits from the existence of authors and creators who make their livings from creative works, and from the existence of distributors who pay those creators and who promote and disseminate their works in the expectation of profit, copyright is not an option – it is a necessity.

Mr Carson noted that fair use exceptions have been adopted within only a very small number of jurisdictions, and only the United States has a long history of recognising the doctrine (now 17 U.S.C. §107). Fair use has little to do with personal use in the US context, however, and is a much-misunderstood area of copyright law. The enumerated purposes in §107 (criticism, comment, news reporting, teaching, scholarship and research) are the purposes that are favoured in the application of the exception, although it is possible to apply the exception to other uses.

Mr Carson said that he took a narrower view of personal use than Dr Malcolm, viewing it as a concept that does not allow non-private use. He noted that in the United States, which has the richest body of fair

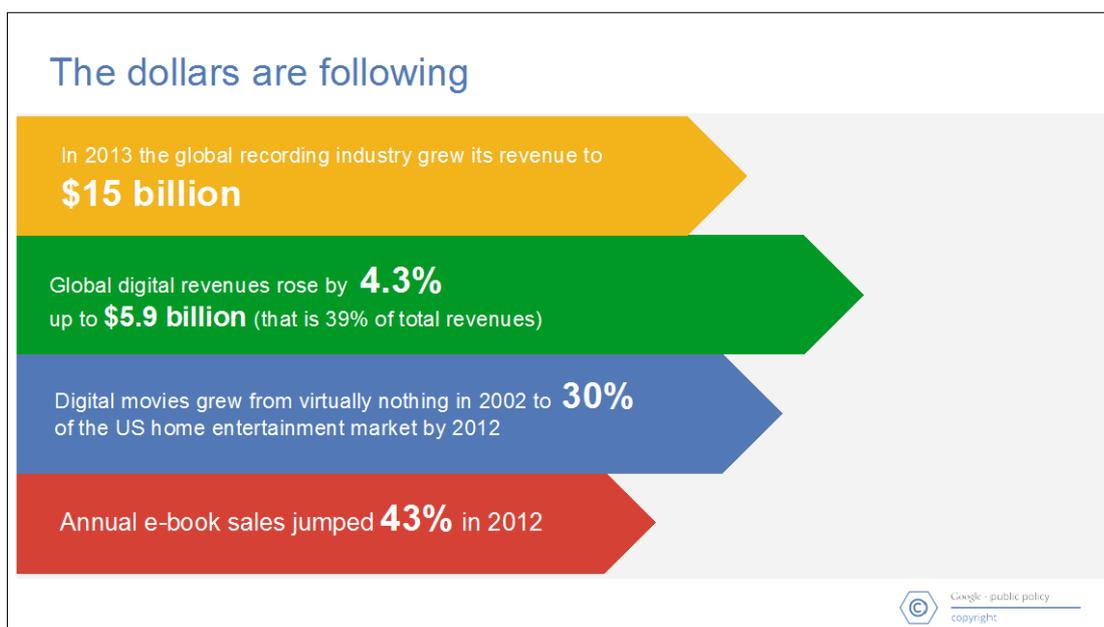
use case law, there have been only two fair use cases involving personal uses and that both involved the copying, for purposes of “time-shifting,” of a television programme that had been made available to the public for free over-the-air. The fair use doctrine does not provide for any general exception for the making of personal copies. In the European Union, Directive 2001/29/EC, which allows for exceptions or limitations to reproduction rights—permits the making of private copies provided that compensation is paid to rights holders. Some rights holders see private copying regimes as a means of obtaining fair compensation for use of their work. Others, the film industry especially, are strongly against private copying exceptions and prefer licensing. The recording industry lies in the middle of these views. As it can be difficult to determine how to licence such activities (for example, transferring music to a flash drive), levying works more effectively here, although licensing of cloud services might work equally well.

Eventually, as technology and business models change, private copying exceptions may become obsolete. Consumers nowadays are less interested in obtaining copies of copyrighted material, and instead prefer streaming of content. Sooner or later, the notion of having or making copies may be out-dated. Mr Carson referred to the terms and conditions of the iTunes store, which permit users to make ten copies of copyrighted material provided that five are made to iTunes-linked devices. Similarly, e-books can often be stored on several devices. Although the film industry is more reticent about moving towards this model, it has developed the UltraViolet platform to access digital content. Given this evolution to match the digital revolution, it is difficult to argue that amendment of the existing copyright regime is necessary: rather, the existing system is doing a good job at keeping pace with developments.

In response to a question from Professor Hall regarding regional limitations within digital content, Mr Carson argued that the source of the problem often lies with the vagaries of different licensing regimes, rather than any obstructions imposed by content producers. A particular seller may only have the rights to provide access within certain regions. Moreover, providers of streaming services often prefer to roll out their services on a targeted, country-by-country basis, irrespective of the willingness of content producers to licence rights on a multinational basis.

A delegate from the UK noted that when the UK government was seeking to reform its copyright laws, it commissioned various IP scholars to produce a study on the type of rights granted by copyright holders when licensing their content. Ultimately, even these experts found it almost impossible to decipher the relevant terms and conditions. That being the case, the delegate asked, how could consumers be expected to understand such opaque rights and limitations? A delegate from the Netherlands referred to lawsuits against young consumers who download unauthorised copies and emphasised that content producers must do more to make sure that consumers (particularly young consumers) understand that what they obtain when they purchase a CD or an e-book, and, importantly, what they can and cannot do with this content. Mr Carson replied that the recording industry has moved away from bringing infringement actions against very young consumers. When consumers buy creative works, they may own the physical CD or book, but they do not gain ownership of the content itself.

Cédric Manara, Google, opened with a reference to PSY’s “Gangnam Style” video, which has been viewed about 2 billion times thus far. This illustrates the success and utility of the personal use exception and does not even reflect other personal uses (transformative, parody, etc.) that add to the success of the video. Mr Manara provided some statistics on the recent success of the recording, film and publishing industries (see below), where revenues have grown despite the apparent threats posed by the digital revolution. However, he acknowledged that the uses that consumers make of creative content, and the means by which they access it, are changing rapidly: via smart phones, tablets, cloud computing, and emerging technologies such as smart watches.



Slide included with permission of Google; figures are from IFPI, *Recording Industry in Numbers (2013)*, available at [www.ifpi.org/resources-and-reports.php#/recording-industry-in-numbers.php](http://www.ifpi.org/resources-and-reports.php#/recording-industry-in-numbers.php).

In such an environment, it is important that personal use exceptions retain their value in order to stay in line with consumers’ expectations. Consumers expect to be permitted to copy content that they have purchased, and to store such material in the cloud. Research shows that consumers consider total benefit when they purchase content, which includes format shifting or moving content onto any device (Rogers et al., 2009). Thus they believe that they have already paid for the uses that should fall within the personal use exceptions. In the future, consumers are expected to experience further economic benefits arising from a greater choice of technologies that rely in part on private copying. A clear exception to the copyright rules in such instances is likely to have a positive impact on growth in the technology sector, providing benefits both to providers of cloud-based storage and to users of such storage.

Mr Manara argued that to encourage new forms of personal use of copyrighted content is to encourage innovation. Providers of private cloud storage would benefit from reduced costs as a result of no longer having to pay for storage of copyrighted material in a private cloud, reduced administrative costs as a result of no longer having to negotiate licences, and reduced legal risks and uncertainty. An exception that removes barriers to launching new online services—because licences either are too expensive or are unavailable—is therefore likely to support innovation and economic growth in the technology sector. Start-ups, in particular, would benefit from any reduction in administrative costs, as these firms are least familiar with the licensing process. He gave as an example the Feedly personal reader service, which has only 12 employees but can handle significant traffic because of its reliance upon cloud-based services. A robust private copying exception would be of particular use for a small company like Feedly.

For personal use to have value, however, the legal framework must provide sufficient support and encouragement. Accordingly, the law should reduce unnecessary restrictions on the use of copyrighted content for private purposes, so that the law aligns with the reasonable expectations of consumers. Mr Manara quoted the Hargreaves Report to the effect that there is no strong evidence of harm to rights holders done by private copying in the normal course of using digital equipment to play works, and that the benefits of being able to do so are already being factored into the prices charged by rights holders. That being the case, he recommended that countries should adopt concrete personal use exceptions that allow the market, new technologies and new creativity to evolve.

Frances Lowe (PRS for Music) queried whether arguments for a personal use exception extend to the cloud, at least in the UK context. Although rights holders in the UK favour a (compensated) private use exception generally, cloud storage is already licenced and this allows for considerable innovation. Mr Manara agreed that levies coupled with licences do not work, and argued against jeopardising the future of cloud services in order to apply levies. The business model used is important in this regard. A delegate from Israel asked whether it might be possible to target levies strategically at more problematic types of copying, as opposed to, say, transferring content from one device to another. Mr Manara replied that the vast majority of content stored in the cloud is not copyrighted, but is, rather, wholly personal content. It is important, moreover, to focus on developing the law optimally for the future, and not merely the present.

Professor Olivier Bomsel, MINES Paris Tech, then made two points. First, from the perspective of an economist, copyright is an institution intended not merely to incentivise creation but also to facilitate transactions based on that creation. If copyright generates transaction costs, it is because it allows transactions to occur. Should copyright be suppressed, there would be no transaction costs just because there would be no transaction at all. Moreover, while bare creation has little economic value as such, transactions based on such creation can generate considerable value. Accordingly, copyright is equivalent to a land right upon which it is possible to build much complementary investment, but it is not particularly valuable in itself. Once a creation enters the media system, it gets value through a mediatisation process. Such mediatisation can be achieved through paid advertisement but also through the free consumption of degraded versions of the works. Professor Bomsel noted that considerable reuse of copyrighted content (e.g. parody) can occur within the mediatisation processes. Copyright enables the right holder to monitor and capture the benefits of the mediatisation of his or her works.

Second, the relationship between producers and consumers is more immediate in the digital world where information about consumers’ choices is systematically collected. Accordingly, there is less scope for exceptions and more scope for direct application of rights. This can be problematic in countries like France where private copying levies have expanded hugely, and where, arguably, the major players are now ‘addicted’ to such levies. There is a risk that, if more private use exceptions are granted, the collecting societies will demand greater levies as compensation. In the digital environment everything can be internalised through exclusive rights, so there may be a need to negotiate with (and potentially provide compensation to) the collecting societies for the loss of their rights.

Dr Strykowski asked whether we might expect more and more tailored offers for consumers, on the one hand, and more and more levies, on the other. Mr Carson noted that, for most of what the music industry sells, there are no restrictions, a legacy of its status as the first creative industry to go digital. Nonetheless, rights holders often make their work available at a number of different price points that provide different options; for example, the option to purchase a film or rent it for 24 hours. If a consumer opts for the latter, why should the consumer also have the right to make a copy of the protected work? Dr Malcolm noted, however, that overly strong copyright rules could prevent personal or fair use even where there was no question of ownership involved. For example, a consumer who rents a film may wish to produce an online review and include a clip.

On the question of tailored offers, Mr Manara said that Google would like to make more tailored offers to consumers, but it is very difficult due to fragmented licensing regimes. It is thus unduly complex to build unique offers. At the same time, this leads to bad experiences for consumers, who find that their access to content differs depending upon their geographic location. A delegate from Spain suggested that the move towards greater digitisation might herald a greater movement from levies to licences, as it becomes more technologically possible to control and track the use of copyrighted content. On the other hand, the multitude of models to be found across the different systems means that this would require significant changes, and thus necessitate a transitional period.

A delegate from BIAC stated that the emphasis placed by Mr Carson at the beginning of his presentation on rights rather than economics was somewhat misplaced, insofar as the recording industry itself is primarily focused on financial concerns. At present, the delegate argued, the entire copyright system is inefficient. Transactional friction is the primary problem, which enables those who benefit from such friction to monetise it. The focus should thus be placed upon getting the money paid into the system to creative parties. (It was noted by a representative of BIAC that the BIAC delegation was comprised of various independent experts in this area, who might not reach consensus on all issues.)

Professor Bomsel said that a basic function of any property right is to allow transactions: although there may be a battle to share the resulting value, this is an inherent feature of transactions, and happens in every field. The difficulty here is piracy: copyright is not inefficient, but it is increasingly ineffective. Professor Graham said that economists know a lot about IP rights, and that the breadth and scope of the rights pertinent to the underlying creativity make a significant difference in terms of the outcomes achieved. Professor Hall argued, however, that IP rights are not the same as property rights from a welfare perspective. Unlike conventional property rights—such as land—my use of an IP right does not prevent your use of the same IP right, so that it is less clear, from the perspective of society, that a State-sponsored restriction is desirable in this context.

The panellists were asked to provide final thoughts on the discussion. In response to a suggestion by Mr Carson that buying a region-appropriate DVD player solves the coding problem, Dr Malcolm argued that this does not address the underlying issues, as rules on circumvention are restrictive and the law should not privilege digital lock technology where it aims to destroy legitimate personal uses. Mr Carson agreed with the Spanish delegate that levies are likely to decrease in importance over time. He was less convinced, however, that the discussion had identified any legitimate personal uses going beyond purely private copying. He gave as an example of a positive development the licensing arrangements between YouTube and the recording industry, which generate benefit for all parties. Mr Manara noted that YouTube is a well-established service, though, and argued that we should focus on making sure that the legal framework changes with future developments and societal and technological changes.

### *IP Protections and Text and Data Mining*

Ian Hargreaves, University of Cardiff, explained that his recent research on text and data mining (TDM) aimed to determine the extent to which the EU’s legal framework supports or obstructs this activity. The background to this study included a perception of weak European productivity and innovation; a lack of success in key digital sectors, notably Internet platforms; the darkening political atmosphere within the digital debate; and a (more positive) perception that it is not too late for Europe to pursue a different course if necessary.

Professor Hargreaves defined TDM as involving ‘the deployment of a set of continuously evolving research techniques which have become available as a result of widely distributed access to massive networked computing power and exponentially increasing digital data sets, enabling almost anyone who has the right skills and access to assemble vast quantities of data, whether as text, numbers, images or in any other form, and to explore that data in search of new insights and knowledge.’ The key aspect is that TDM involves the automated exploration of data, which can be contained in any format, whether text, numbers or images. TDM is potentially useful to researchers in all fields, from arts and humanities to medicine and the hard sciences. Cost is not a barrier to entry, while data analytics lie at its core. The predicted economic value of TDM is high, but also fairly speculative. While the OECD has highlighted the increasing importance of TDM as a means of supporting innovation and growth (OECD, 2012), a clear and predictable legal framework is needed to underlie such development. EU law currently deploys an approach based on ‘fair dealing’ with named exceptions, whereas US law uses the more generic ‘fair use’

exception. EU law also incorporates the Database Directive, which has no US counterpart, while data privacy and protection are also relevant.

The European Commission’s 2014 TDM review was conducted within a short timeframe, without an opportunity for independent stakeholder consultation. Nonetheless, the existing literature demonstrates the wide variety of views in this area. European publishers argue against reform of the copyright laws to facilitate TDM, and instead propose changes to their licensing procedures to meet the needs of data miners. Researchers, by contrast, argue that the right to read should include the right to mine, and point to high costs in time and other resources in dealing with publishers’ access systems for TDM. In addition to arguments regarding copyright, there have been arguments about open data, open access to other sources of knowledge and the role of the State. A difficulty for policy makers is the absence of concrete evidence regarding the optimal degree of copyright protection to minimise transaction costs and facilitate TDM, yet still protect rights holders. Empirical evidence points to an increasing number of references to TDM in academic publications, plus increasing numbers of patents that have been granted referencing TDM. From this evidence, it is possible to determine that the greatest volume of TDM occurring worldwide takes place in the US, followed by other Anglophone countries, and that levels are increasing.

Given existing levels of research expenditure in Europe, and the fact that TDM tends to increase researcher productivity, it can be assumed that a strong TDM industry in Europe would offer much economic value. Whilst it is impossible to be precise about potential benefits, a GDP gain with an order of magnitude of tens of billions of euros is feasible. Two further economic unknowns in this area, however, are what effects upon supply might arise from compensation of rights holders for loss of their rights to restrict or prevent TDM, and what economic benefits might flow from increased quality of research based upon access to more comprehensive data.

At present, the market for TDM in Europe does not work well. There are problems of high transaction costs, strategic behaviour by rights holders, and externalities. Any exception to rights protection for TDM could range in coverage from small (e.g. restricted to scientific publisher databases alone) to vast (e.g. all databases behind a firewall). While public debate has focused on science, the potential scope here is much broader, including, for example, web-scraping.

One unresolved issue is whether rules governing TDM should apply to all research or only to non-commercial activity. The 2014 TDM review considered whether legal barriers inhibit the use of TDM in Europe for research purposes, and if so, how the legal framework might be improved. The review considered three potential options for legal reform. First, it is possible to opt against reforming the copyright rules themselves, but instead improve licencing arrangements. Second, there is the option of redrawing the copyright rules, to provide, for example, a more normative approach to reproduction rights, exceptions to copyright and/or database rights, or open norms. Third, it would be possible to proceed by way of straightforward exceptions to existing copyright law to protect TDM. Across all of these options, however, data privacy issues might arise.

In conclusion, Professor Hargreaves emphasised that TDM is an important research technique with strong growth potential. It presents significant economic opportunity for Europe, and merits the attention and support of policy makers. Europe lags behind the US in this area, so legal reform to facilitate greater use of TDM appears necessary. Without reform, moreover, there is a risk to European competitiveness. At present, copyright law in Europe exceeds its useful boundaries in relation to TDM, inhibiting beneficial research activity. Licensing, the preferred approach of scientific publishers, provides a short-term solution but is an insufficient response. Developing specific exceptions to copyright, as advocated by the research community, is a positive step, but may generate certain problems and complexities, particularly concerning the division between commercial and non-commercial research. As a medium term solution, an EU-wide exception for TDM for scientific research should be brought forward. Nonetheless, the 2014 review

concluded that a more strategic reform of copyright and database law in the EU is the best option in the longer term. A durable distinction should be made between copyright’s protection of ‘expressive’ works—the core purpose of copyright—and its more questionable role in restricting or controlling basic automation of research. At the same time, it is necessary to avoid wrong moves on database protection and privacy.

Following a query from the delegate from the EU regarding calculation of potential economic impact, Professor Hargreaves explained that these figures are broadly drawn, and that it is difficult to be precise in terms of analysis. Essentially, one is either convinced or not by the argument that there is substantial value to be realised here. Responding to a question from a Swiss delegate about whether the apparent advantage of the US might be attributable to greater homogeneity in that market, he agreed that this was an advantage for the US, alongside the greater skills base available. Whilst it is difficult to disentangle these from the legal issues, the latter are clear: the fair use defence facilitates use of TDM in the US, whereas in Europe there is a combination of inhibition due to legal uncertainty coupled with a lack of skills.

Professor Hargreaves added that, interestingly, the Internet presents those who consider themselves to be economic and social liberals with a need to balance potentially conflicting interests between access to scientific information and protection of data privacy. The protection of personal data may lean against changing the legal framework for TDM. There is no ‘right answer’ here, but there is a significant danger of unintended consequences unless Europe considers these issues more deeply.

Pedro Mizukami, Centre for Technology and Law, FGV Law School, spoke about TDM in the context of Brazil. The IP system in Brazil is generally unfriendly towards TDM, creating strong incentives against such activity due to potential copyright issues. Anecdotally, FGV Law School has opted against data mining of legal literature due to fears about copyright ramifications. While there is a strong media presence for big data as a topic in Brazil, there have been no high profile cases involving copyright and TDM, and this issue is largely absent from media discourse. Similarly, debates on TDM and copyright are not common within policy fora in Brazil. The background issues, however, have been subject to intense discussion in the on-going copyright reform process since 2007.

The existing copyright rules, contained in Law 9.610/98, are very restrictive, to the extent that almost any use of copyrighted content is prohibited (and, indeed, criminalised). The rules were drafted for a pre-Internet, pre-mass digitised world, and were almost immediately inappropriate upon enactment, while the closed list of limitations to protection has been narrowed continually since the first law was enacted in 1898. The existing limitations are insufficient to permit TDM, insofar as any act of copying or digitisation is potentially an infringement, which renders TDM a very risky activity. Brazilian copyright law lacks an explicit rationale for copyright protection, and similarly lacks a rationale for its various exceptions and limitations. In such circumstances, a defendant may be forced to base his or her defence directly upon the constitution, an uncertain argument to maintain. There is an absence of scholarship on copyright in Brazil, other than that produced by scholars with ties to content producers, while few law schools offer copyright courses. There is also an absence of case law on these issues, apart from cases taken by the Brazilian collecting society, ECAD. Nonetheless, in two recent decisions, from 2011 and 2013, the highest courts of appeal made direct use of the Berne three-step test to expand the list of limitations beyond those found in the existing law, holding that it would be unfair to find an infringement in the circumstances of the non-commercial use at issue, which involved religious music.

Copyright reform has been on the agenda since 2007 and a draft text was placed under public consideration in 2010. Although the revised text does not contain an express exception for TDM, the public consultation resulted in considerable expansion of the list of specific limitations, with, an open-ended limitation inspired by the Berne three-step test that might cover TDM. The latest version of the bill includes a requirement to take account of fundamental rights in the application of copyright law. Opposition was channelled initially through ECAD, which was mainly concerned about stronger

transparency rules for collecting societies but attacked the entire bill in the process. In response, the provisions that relate specifically to collecting societies were removed from the general bill and have already been passed separately, which has changed the political landscape significantly. A different configuration of political forces and pressures will thus take shape in Congress when the bill arrives there in 2015, potentially creating greater scope for an explicit TDM exception.

Carlo Scollo Lavizzari, Lenz Caemmerer Attorneys, spoke about the existing opportunities and current challenges raised by TDM. Big data has become a reality, and the challenge is to enable this further. TDM is applicable to, and of distinct value for, a range of activities such as biomedical research, security, sentiment analysis and searching. Yet, challenges exist: at present there is insufficient (albeit fast evolving) demand for published content; there are difficulties in defining TDM; and there is a fundamental question of whether it is fair and sensible to create and transfer economic value to third parties for a very low rate of return. In relation to the latter issue, academic publishers claim that the apparent rush to transfer value from one set of parties to another is misguided. There are multiple relevant stakeholders: publishers, researchers, those involved in corporate R&D (e.g. pharma), and commercial ‘toolmakers’ such as software companies that develop new products based on cross-publisher mining and entity extraction.

The contention that the EU is falling behind the US in terms of TDM activities can be disputed. The publishing industry examined the relevant data and is of the view that the EU is actually ahead of the US. Going forward, it is important to enable successful TDM by allowing a viable ecosystem to evolve. This requires the development of a collaborative system that allows fair returns on investment in necessary TDM infrastructure. Publishers are aware that they are not the only stakeholders in this regard and that there is substantial potential for economic, scientific and humanitarian value to arise.

Mr Scollo Lavizzari then discussed various initiatives taken by the publishing industry to facilitate TDM and to build value with other stakeholders. These include involvement in working groups on licences and technical standards; development of the ‘click-through’ Licence 4 Europe; involvement in the Copyright Clearance Center (CCC) TDM platform, which aims to enable search and delivery of content; and CrossRef Prospect, an intermediary that allows access to full text content for institutional subscriptions.

A significant fear of the publishing industry is the potential misuse of content, so the industry wants to retain some measure of control over access and use. On the other hand, the existing mechanisms and processes need to operate more quickly and easily, so the industry has a number of innovations in the pipeline that are intended to remove any obstacles that remain. This includes simplification of the process, provision of new technology standards and solutions, commonality in normalised formats and for content and data to sync, consistent licencing terms, and collaboration between all those involved in the information chain to provide combined solutions.

One should be wary, however, of transferring existing value to intermediaries immediately; it makes more sense to maintain caution and focus on improving the avenues available. Successful TDM requires the consent of rights holders: exceptions to copyright law are unnecessary and probably harmful. The possibility of massive downloads entails a risk of piracy and of illicit transformation and use of content. For commercial TDM, policy makers would interfere in existing markets; while, for non-commercial activities, it is premature to legislate. Mr Scollo Lavizzari concluded by emphasising that unfairly transferring economic value to third parties involved in TDM would undermine investment in the ‘minable haystack’, i.e. quality content.

A delegate from the UK acknowledged the need to provide incentives to make content available for mining, and also for producing software, but queried why licences for software are tied to ownership of content when these aspects are largely unrelated. He noted the complexity of licence terms and conditions,

particularly for institutional access, and asked why content providers are so bad at explaining things to their customers. Mr Scollo Lavizzari accepted that licensing is often complex in practice, at least insofar as the objective is to encourage high-quality TDM using verified data. Although the publishing industry has collaborated in an effort to provide clearer template licences, there are limits to what can be achieved in this regard. Content that was produced originally to be read needs to be “normalised” before it can be mined, which requires the necessary infrastructure to be put in place. Some parties seeking access may seek too much, however, and criticisms of complexity in this regard may go too far. In response to a question from Mr Manara, he clarified that the main discussion within the publishing industry concerns access to texts, although other data sources are increasingly relevant.

Sergei Filippov, The Lisbon Council, presented evidence on levels of TDM in Europe. The world of data is growing exponentially: annually, the global research community generates over 1.5 million new articles, with an estimated 50 million articles in circulation as of 2010. TDM is an emerging research technique that has the potential to make sense of this avalanche of data, but is itself subject to copyright law. As part of the 2014 TDM review discussed by Professor Hargreaves, the Lisbon Council undertook a study to assess the scale of use of TDM processes and techniques in academic and research communities in Europe. To do so, it examined scientific publications about TDM and patents granted relating to TDM, and conducted interviews with experts and representatives of the research community.

First, the study looked in Elsevier’s ScienceDirect database at scientific publications that treat TDM as their primary subject-matter. Between 1995 and 2013, there were 1,374 publications about data mining, and 158 about text mining. About half of the work on data mining was done by US researchers and about a quarter done by EU scholars, the latter having lesser impact judged by number of citations. Publishers are typically reluctant to grant access to their databases and prefer to maintain the status quo, either due to fear of misuse or fear of undermining their own competing products or services. According to the British Library, it takes 16 months on average to negotiate copyright permissions with each publisher.

Turning to patent analysis, conducted using the EspaceNet Worldwide Database of the EPO, 2279 patents were granted between 2000 and 2013 which include the phrase ‘data mining’ in the title or abstract. The greatest number of patents granted was in the US, with China second (and progressing quickly). In the EU, by contrast, software is not patentable, which makes it more difficult to gain patents over TDM techniques. In terms of nationality of the inventor, again the greatest number of patents was granted to US nationals or persons based in the US, followed by Chinese nationals. Relatively modest numbers were granted to EU-based inventors. The EPO has granted relatively few patents relating to TDM, with the majority of these owned by large US corporations.

Finally, to gain practical evidence on the use of TDM, semi-structured interviews were held with 20 researchers (based in Belgium, Germany, the Netherlands, Slovenia, Spain, Sweden, the UK and the US), most of which are active in the social sciences. Virtually all respondents had at least a minimal knowledge of TDM/data analytics: some respondents employed it already, whereas others might like to do so but lacked the relevant skills. Within the social sciences, TDM was seen as having considerable future potential, but not yet as a mainstream research method. Many respondents were concerned about its copyright implications, and so would restrict any data mining activity to text published in the public domain (e.g. working papers, non-peer-reviewed articles). This creates the risk, however, that such research would be of lower quality. There was also a suggestion that data analytics should be given greater prominence in university curricula. When asked about the IP implications of TDM, some scholars argued that there should be a personal use (‘sharing for research’) exception, whereas others were more critical about the use of IP to protect, and arguably restrict access to, academic research at all.

Dr Filippov concluded by noting the strong increase in the number of publications and patents referring to TDM, growth that appears to be driven primarily by the US and Asia. Europe lags, raising

questions as to whether the strong IP protections granted in the EU are a hindrance. There is a degree of uncertainty amongst scholars about the extent to which copyright applies to, and might inhibit, TDM, and the European research community is strongly in favour of an approach based on ‘open access’ to scientific publications. Thus, the traditional business model of the academic publishers is under pressure.

The UK delegate noted an interesting ‘natural experiment’ about to commence in the UK, as TDM of academic texts would be legal from 1 June 2014. This change was motivated by pressure from universities as well as various government ministries. Mr Scollo Lavizzari disagreed with the view that the US is a better environment for TDM, pointing to what he characterised as judicial activism in cases like the Google Books settlement. While publishers might disagree with the need for the UK exception, at least it is legislatively created. The Moderator, Christian Reimsbach-Kounatze (OECD), noted that a potential benefit of TDM is it allows researchers to mine and combine information from a number of databases produced by different publishers, and he asked to what extent the existing regimes permit and/or facilitate such work. Mr Scollo Lavizzari explained that CrossRef, a system aimed at the non-commercial market, enables text search and retrieval across several sources. In this sense, any copyright exception for TDM would be at most a shield and not a sword, as it is necessary to have an access mechanism in the first instance. The CCC approach is different, insofar as it assembles copyrighted material in a single location. One problem, however, is that content producers often have confidential information that they do not want to share generally.

*How Have Changes in the Legal Protections for Copyright Owners Affected Creative Content Generation, Distribution and Consumption?*

Sacha Wunsch-Vincent, WIPO, noted that the discussion around this topic can take two turns: a narrow one, that is debating the length of the copyright term protection and its effects and a broader one, debating which legal and economic fundamentals are necessary to generate a sustainable and vibrant digital content ecosystem. He urged the panel participants to focus on the latter to generate a more productive outcome.

Isolating the effect of copyright duration on content creation while taking into account the new digital environment, and the changed underlying economics of the content industries has proven hard, if not impossible (Wunsch-Vincent, 2013). This also has to do with the different effects copyright has on the creative supply, access to copyrighted works and associated institutional parameters in terms of positive impacts (e.g. incentives for creators, enabling transactions) and negative impacts (e.g. potential reduction in follow-on creativity, increased access costs for users, transactions costs). Economists have to disentangle the effects on all stakeholders, including creators, performers, rights holders and consumers. In considering the scope of the law, it is necessary to consider the protectable subject matter, the scope of exclusive rights, exceptions and limitations, the duration of protection, and the level of enforcement.

This framework for analysis, moreover, has to adapt to take account of changes brought about by digitisation and the increased role of the Internet, leading in turn to changes on how content is created, how it is distributed and how copyrights are administered. On the side of content creation, there is a blurring of the line between consumers and producers in terms of production, alongside a decrease in distribution (but not necessarily production) costs (OECD, 2007). New distribution channels and revenue models have emerged, alongside new forms of compensation and revenue sharing (OECD, 2005, 2008). The predicted growth in disintermediation (i.e. direct delivery of content) has not occurred, while re-intermediation has actually grown in some areas, with the prominence of e.g. YouTube and Netflix. Bargaining power might have shifted away from content owners and producers in recent years. We know relatively little about how these changes impact artists’ and content industry revenues (OECD, 2005, 2008). Online piracy is a pressing problem: while not to blame for all difficulties it must be taken into account. In terms of rights’

administration, the management of copyright globally remains complex and the potential for simpler management processes has not been exhausted.

Dr. Wunsch-Vincent suggested that the basic tenets of copyright economics regarding the incentives for new creative works are largely untested in existing economic literature. The majority of the empirical economic evidence since the advent of the Internet has focused on the effects of unauthorised downloading on the creative industries, with a particular focus on music and more recently films. Beyond this there is little empirical evidence regarding the effects of stronger rights on the supply or the price of creative works. There is a need for greater empirical (and independent) data (Wunsch-Vincent, 2013). First, statistics are missing on the quantity, quality and prices of creative works supplied. Secondly, data is missing on the revenues generated on the basis of copyright and the respective distribution of these revenues between creators, the creative industries, and other intermediaries. Third, and related to the point on costs, little convincing data is available on the administrative and transactions costs related to copyright

From a policy perspective, while term extension was important in preceding years there is now more policy discussion around the topics of preserving the level of protection online, improving the relevance and workings of limitations and exceptions (e.g. the WIPO Marrakesh Treaty to Facilitate Access to Published Works for Persons Who Are Blind, Visually Impaired, or Otherwise Print Disabled, or work in the area of user-created content), improved rights management (orphan works), and copyright relinquishment and other topics to creating a balanced and vibrant copyright system. The view of WIPO is that it is most important to focus on ‘copyright infrastructure’: thus, it is necessary to have a framework for easier licensing of content worldwide and for improvement of digital markets. Greater work needs to be done on the impact upon creative supply within this new environment.

A delegate from the UK noted recent work by the BBC, which revealed that, even as distribution mechanisms changed and costs dropped significantly, contracts between artists and their labels did not change. Thus, most artists continue to receive a very small proportion of overall revenues, creating a disequilibrium that must be corrected. In response to a question from BIAC regarding the revenue shares received by artists in the online world, Dr Wunsch-Vincent emphasised that the main issue is the lack of evidence, with a need for further research to provide a more accurate assessment. A delegate from OHIM suggested that one way of measuring the effectiveness of the current system would be to measure whether supply is declining; at present, supply appears to be increasing, despite the apparently difficult environment.

Frances Lowe, PRS for Music, explained that she represented a collective management organisation, which viewed the sustainability of artist revenues—broadly construed to include composers, performers, publishers etc.—as a critical component of content creation. Copyright is an area of law that must be underpinned by data and economic evidence, of which there is now an increasing amount available (OHIM & EPO, 2013; Department for Culture, Media & Sport, 2014; UK Music, 2013). Common methodologies for assessment of the value added by copyright creation to the economy are also emerging, although there is a need to improve the evidence base further. The evidence to date supports the view that the creative industries have a significant contribution to the economy, including job creation. UK interests are working on improvement to the evidence base: one example is a recent collaborative exercise involving the UK’s Office for National Statistics, the Department for Culture, Media & Sport, and the music industry to examine the statistical classification of music in the economy; it identified substantial gaps in how the music sectors are categorised in existing Standard Industrial Classification codes, in part because of the evolution of these industries in the digital economy. There is an opportunity to revise these classifications and codes at the global level in 2016, which would enable more accurate measurement of industries and the impact of policy changes on those industries in future. Furthermore, to undertake effective rights management PRS for Music registers all new creative works of its members, a dataset that might provide a fertile ground for further research on changing levels of creativity, and the impact of policies on creativity.

Distribution modes within the music industry have evolved significantly over time, from physical analogue, to physical digital, online downloading, and now online streaming mechanisms. While these changes were welcomed by the industry, the emergence of online downloading marked a decline in overall revenues, which has continued with the move to online streaming models. Although subscription revenues are growing, the download model is already in decline, and there is anxiety within the industry that individuals receive insufficient returns for their creative work. For example, within the UK in 2013, only about 7% of consumers who buy music paid for streaming services. While another 7% intended to do so in the following six months, these figures are comparatively low.

Turning to the legal framework, Ms Lowe noted that the European Commission had recently issued a chart showing authors and artists as the ‘roots’ of the tree of the creative and Internet economy. It is important to make sure that authors receive sufficient returns within the overall ecosystem, alongside others who make significant investment such as publishers and broadcasters. In this regard, Internet distributors do not invest in content creation to the same extent that traditional distributors do. On the issue of term extension, Ms Lowe noted that the reforms in the EU were the result of internal market harmonisation rather than an issue of IP as such, and that it was necessary to harmonise upwards to protect the rights of those in countries that granted longer protection.

Within the overall copyright ecosystem, there is a distinction between primary liability (attaching to an individual or service that uses copyrighted material, typically communicating to the public or copying a work without authorisation) and secondary liability (attaching to intermediary services, which may attract contributory or vicarious liability). Some business models, however, allow for the avoidance or illegitimate exploitation of copyright to the detriment of rights holders. In 2012, PRS for Music worked with Google and Detica to produce a data-driven survey of websites that infringe copyright, identifying six distinct business models for pirate sites and how these illegal businesses were financed by advertising, subscription or payment cards. Ms Lowe emphasised the need for more data-driven work to understand how business models work. There is also a need for greater consumer education, so that consumers understand the link between copyright revenues and, for example, the remuneration of creators.

Ms Lowe added that although there are more intermediaries in the ecosystem taking responsibility, concerns still exist regarding monetisation that does not return to the investment cycle and thus harms sustainability for creators. There is considerable concern amongst content creators about expanding copyright exceptions for new business models, which may see a transfer of value from creative to technological industries. Further evidence is also required to assess the potential impact of an exemption for cloud computing models.

In response to a question comparing streaming services funded by paid subscriptions versus free services funded by advertisements, Ms Lowe explained that digital service providers prefer subscriptions, as they offer a more sustainable business model. A UK delegate described the results of empirical research commissioned by the UK government, which found that the majority of consumers consumed legally and paid for their consumption; whereas, perhaps counter-intuitively, those who use illegal services also spend a lot on consuming services. As a fairly small group of users consume the bulk of illegal services, it might be easier to target enforcement. Responding to a question from a Spanish delegate regarding the role of collecting societies online, Ms Lowe noted that collecting societies are owned by their members and work in their interests and would have a role if their members wanted them to. There are significant benefits in terms of having a number of hubs for licensing for data collection, and thus there is almost certainly a role for collecting societies within the online world, but transparency will be key in this regard. Dr Wunsch-Vincent added that this is also the view of WIPO, which continues to see an important role for collective rights management, but, again, transparency is vitally important.

Samsung Xiaoxiang Shi, East China University of Political Science and Law, spoke about copyright in China. While it is now accepted that copyright provides incentives for creation, controversy exists regarding the optimal role for copyright in Chinese society. China might thus provide a prototype for empirical research on the correlation between the generation of creative content and the strength and rigidity of copyright protection.

At present, the market for content creation in China is isolated and highly regulated. Copyright is fairly young there, which, Professor Shi suggested, is because the concept of authorship in China is different—and less romantic—than it in Western literary traditions. Traditionally, Chinese authors were less concerned about reproduction and instead were happy to have their works read. During the Cultural Revolution, moreover, authors were viewed as equivalent to any other workers, and not deemed worthy of special protections.

The Copyright Law of the People’s Republic of China was first promulgated in 1990; it has been revised twice and further amendments are proposed. From its initial enactment to the most recent revisions, foreign trade (and consequent international pressure) was an important consideration within Chinese copyright law. Notably, however, the proposed third amendment to the copyright rules has not been prompted by the exigencies of trade but, rather, by an emerging desire to promote and protect Chinese culture.

Historically, enforcement of copyright in China was hindered by the segmented nature of government, with little inter-agency collaboration. Since 2010, however, China’s central government has had a greater commitment to copyright, which has resulted in much more effective enforcement. Professor Shi contrasted earlier approaches to digital piracy, which involved physical copies made on DVD, with contemporary piracy through infringing websites. Because earlier forms of piracy were relatively low level and involved numerous individuals, they were relatively difficult to police. By contrast, online piracy can be countered simply by shutting down infringing websites, often without any need for (elusive) collaboration between different government agencies. Several particularly notable cases in 2013 were the decisions against Baidu and QVOD, both prominent web services companies in China, for facilitating access to websites containing pirated material. In response, both companies received the highest statutory penalty that could be levied for such conduct.

There is an increasing realisation of the importance of IP to the economy in China, particularly in terms of growth. An interesting topic in this regard is the online literature industry. Literature websites, which publish works typically written by non-professional authors, are hugely popular in China. Authors publish their writing exclusively online, often in instalments, and are paid very small amounts by each reader. Although most authors make nothing from online publishing, the most popular have earned very large amounts and the online literature industry is hugely profitable. For some writers, simply receiving recognition for their work is sufficient compensation; for others, however, and particularly from the perspective of online literary websites, copyright is critically important to the digital value chain. Copyright is not the only area of concern here, though, as quality control and market saturation are increasing problems. Nonetheless, there is a strong argument for legal protection of the authors’ moral rights, regardless of the financial consequences.

Professor Shi added that, although non-commercial usage or sharing is desirable to both authors and users of creative content, commercial exploitation of creative works is likely to be the focus of further regulation in China. He noted that his conclusions differed significantly from those made in the preceding presentation, and acknowledged that the music industry appears to view China as something of a lost cause.

In response to a query from an Israeli delegate regarding cultural approaches to authorship in China, Professor Shi explained that culture is partly the explanation for the historical ambivalence towards copyright law, but also the absence of a market economy meant that notional rights would be worthless. Now that rights can be traded, authors certainly do not shun remuneration. Responding to a question from a Swiss delegate regarding the impact of the introduction of TRIPS in China, Professor Shi explained that it is difficult to persuade Chinese scholars to conduct empirical research in copyright law.

### *Session Three: Conclusions for Policy makers*

The final session of the workshop provided the panellists with an opportunity to respond to other presentations and draw out important themes from the workshop.

#### *Patents*

Professor Ouellette outlined a series of conclusions for policy makers that follow from her presentation on patent disclosure. She emphasised the need to improve the quality of disclosure: often, it is not so much the case that the existing law is defective but, rather, that it is not applied properly. Greater time and resources should be devoted to scrutiny at the initial (i.e. patent examination) stage, to ensure that, for instance, the patented technology is reproducible by a person skilled in the art. Although patent examiners have scientific backgrounds, it is difficult to be skilled in all areas, so peer review of applications might be beneficial. Parallels can be found here to current practise in the US where crowdsourcing has been used to determine prior art. It is necessary to ensure that scientists have access to the patent literature; Google’s patent listings are useful in this regard. In the US context, the recently reformed ‘wilful infringement’ doctrine needs to be clarified. Professor Ouellette also noted that 18 months is a long time lag between filing and disclosure in fast-moving fields, and suggested that university patents might be disclosed earlier. She also encouraged greater citation of relevant patents within scientific literature. Finally, there is scope for further empirical work, and she herself plans to extend her survey to other fields and possibly to other jurisdictions.

Mr Pilat noted that the OECD is engaged in work on data mining of patents, with some valuable information emerging. He noted, nonetheless, the scope for further empirical work on this issue, which might involve granting third party access to the large OECD database. A similar project is underway using trademark and design data, with the collaboration of OHIM.

Mr Clayton endorsed the points made by Professor Ouellette, and suggested that it might be desirable to go even beyond her recommendations. It is crucial that patent data is seriously useful in order to make markets work. If intangible capital is the foundation of the economy for the next century, then it is necessary to have a well-functioning information system in place: hiding such vitally important data will not help progress. A study conducted by the UK on patterns of patent litigation found it almost impossible to find relevant data, although the US is somewhat better in this regard. Such issues should be rudimentary with respect to any property right, particularly one that plays such an important economic role.

A delegate from the US acknowledged that, when she worked as a patent examiner, she rarely rejected a patent on the basis of insufficient disclosure. While further training might help patent examiners, most would feel that this is an extreme thing to do. Most applicants are wary of being too specific in their applications, as this might lead to a narrow patent being issued and have unintended consequences in future patent litigation. The delegate suggested that, in some systems, patent disclosures do not work well because the relevant information is not readily available or can be accessed only for a fee. We should promote free and convenient (i.e. online) access to patent data within all jurisdictions, as access to information is critical for technology transfers. The delegate also said that whether 18 months to disclosure

is the appropriate period is likely to depend upon the area of technology and also upon how long it takes to have the patent itself examined.

Professor Ouellette noted that discussions regarding IP often start from the assumption that such rights are necessary to provide incentives for innovation and creation. IP is not essential to encourage inventors and creators, however, as it is possible to do so using taxes or grants or prizes or broader industrial policies. So bear in mind that reliance upon IP is not inevitable or unavoidable here.

A delegate from Switzerland remarked upon the apparent need to improve the quality of patent disclosure and suggested that a failure to do so may undermine the TRIPS bargaining structure insofar as an absence of disclosure denies developing countries the means and opportunity to catch up technologically. A delegate from the EU noted that there is a practical limit to the work that can be done by patent offices when examining and issuing patents, particularly as the number of applications continues to increase. Nonetheless, efforts should be made to increase and improve the information that is available regarding the patent system, for example by publishing details of court judgments, ownership of patents, etc., alongside continuing expert work by bodies such as the OECD and EPO. Furthermore, it is vitally important to obtain empirical evidence on the innovation and knowledge diffusion effects of the patent system. In terms of future research, it would be useful to consider the extent to which patents actually make a difference to innovation.

Dr Wunsch-Vincent remarked that considerable work has been done in terms of collating and presenting patent information for economists, but, increasingly, researchers want access to the entire patent, so WIPO is currently engaged in a project that will make patent information available in its entirety. Considerable information sharing also takes place through WIPO-sponsored technology and innovation support centres.

A US delegate acknowledged that TRIPS requires a certain minimum level of disclosure, but only to benefit those who are already skilled in the art, meaning that the disclosure requirement is not too onerous. Although access to the whole patent may be useful for researchers, access to the file history is likely to be of even greater use, so that greater access to files should perhaps be encouraged across jurisdictions.

Professor Bounfour added that it is necessary to focus on the importance of patents for entrepreneurs in raising funds, and to consider the timespan of technology as such issues can be quite different for different (fast-moving) technologies. Professor Ouellette concluded the discussion on patents by acknowledging that jurisdictions have limited resources to expend on patent examination. Yet peer review is relatively inexpensive, and it already works well in relation to scientific publications. Furthermore, there is scope for better-resourced survey evidence in this area.

### *Copyright*

Dr Malcolm noted that a globalised ‘fair use’ exception is an ambitious idea and, potentially, a valuable one. Many commercially valuable IP rights begin as non-commercial fair use; for example, *Fifty Shades of Grey* was first conceived as *Twilight* fan-fiction. More generally, it is important to ensure that the existing copyright rules are not so inflexible that they cannot adapt to innovative practice. Thus, personal use rights should not be framed narrowly or prescriptively, e.g. limited to a particular number of copies. Rather, it is important to reiterate that some personal uses lie outside the purview of copyright entirely. In this regard, an overarching globalised fair use rule would seem to have particular utility.

Mr Manara remarked upon a growing trend to use copyright as a protectionist tool, with recent laws that appear to be targeted exclusively at a very limited number of prominent Internet actors (such as Google). For instance, a number of jurisdictions have created a concept of ancillary copyright that creates

IP protections for certain types of *information*—and not merely *creativity*—which includes press material. The result is that the indexing of such material triggers the copyright law; in effect, this ancillary form of copyright is a disguised tax to protect local media. Such laws have been enacted in Germany, are pending in Spain and Israel, and have been proposed in France. Laws of this nature are not copyright in the conventional sense, and, arguably, are contrary to international trade agreements. Nonetheless, it is a worrying global trend with a protectionist objective.

Professor Hargreaves summed up the conclusion of the Hargreaves Review on IP for the UK government as: start moving in the right direction, not the wrong direction, on IP reform. Establishing the appropriate direction of travel in this regard is significant. The role of copyright from the perspective of consumers and end-users is a much-discussed issue, but we should be wary about applying these rules to areas of human activity where it was never intended to apply, such as automated copying. One of the primary reasons why the UK chose to review and reform its copyright rules was a fear that, otherwise, the copyright system would fall further into disrepute, insofar as it alienated and appeared illogical to users yet was ineffective to protect the legitimate rights of creators. Further work to improve licensing systems needs to be undertaken, especially to reflect the shift to a digital environment. Had more incremental reforms of the copyright system been undertaken earlier, then some of the more fundamental criticisms faced by the system might have been avoided. It nonetheless remains a case of ‘better late than never’ in terms of reforming copyright for the future, although, as the Brazilian example demonstrates, the creative industries continue to be resistant to change.

Although enforcement of copyright in China has proven easier in the digital environment than in the pre-digital world, this has not been the case in most other jurisdictions where the copyright rules were well established beforehand. Echoing the comments of Mr Manara, Professor Hargreaves agreed that the future of copyright in the digital context is aligned, to a large extent, to the future governance of the Internet. The apparent desire to constrain the Internet is at odds with the desire to realise its innovative potential. It is important to ensure that future policy making for either Internet governance or digital copyright issues is not informed solely by vested interests, but, rather, is aimed to connect IP policy to an innovation-friendly agenda. If the existing energy and enthusiasm for innovation in the digital sector dissipates, it may become easier to regulate IP issues via the Internet, but society as a whole is likely to pay an unacceptably high price for this convenience. This danger is, perhaps, the biggest issue facing the knowledge-based economy at present.

Professor Mizukami added his support to the notion that the IP system represents an exchange between society as a whole and inventors/creators. It is unhelpful to distinguish between copyright as an economic concept or as a rights-based one, insofar as this tends to stifle debates regarding the optimal shape and operation of copyright. In view of the relatively limited existing understanding of incentives in knowledge-based industries, we should encourage and facilitate further empirical research, including providing access to data as necessary. Important issues for future research include monetisation, advertising and the role of intermediaries.

Dr Wunsch-Vincent re-emphasised the need for empirical research and data on copyright, particularly its impact on price and quality. Many of the presentations focused upon the need and possible means to improve the existing copyright infrastructure, including greater access to relevant data. In this regard, clarifying the rights of users is important for securing greater compliance with existing law. Finally, compelling arguments can be mustered both in favour of and against the copyright system. At present, the pendulum of popular opinion appears to be swinging against copyright, so that there is increasing emphasis on exceptions, limitations and improving access to copyrighted material. It is essential, nonetheless, to retain a balance between these competing interests. Policy makers should not take the supply of creative works for granted in reforming the copyright system.

Ms Lowe spoke about the link between protection of the rights of authors in the online environment and the movement from levies to licences online. There has been an increasing emphasis on access to licences, perhaps through automated means. In the UK it may be possible to use the Copyright Hub for this purpose. There are possible technology responses, as market actors are increasingly aware of where the money lies in the distribution chain. There are also potential regulatory responses, which might include greater transparency requirements for collecting societies, a move that is welcomed by PRS for Music. In addition to educating consumers about the need for and operation of copyright, there is a further need to show that licencing works and to make it work in practice.

Professor Shi emphasised that copyright needs to work for the benefit of users and consumers as well as rights holders, and in this regard the existing copyright system ought to reflect the needs and expectations of users. The Internet is changing the face of many industries, and has developed so quickly that the law lags behind. Policy makers should allow some markets to develop organically, but make plans with an eye to future developments. We should perhaps be wary of opting for licencing as the dominant model in the digital world, given that it has the potential to result in even greater centralisation of content distribution. Excessive centralisation and concentration can lead to problems of monopoly. Voluntary licensing is promising in theory, and commercial users are likely to be willing to pay where licences are available. Self-regulation may not work well in practice in all situations, however, given the significant self-interests at stake. In this regard, he noted that China has no real effective copyright collecting societies. There is also a need to think further about international cooperation: while the Chinese market is relatively isolated at present, it is undergoing considerable development.

A member of the audience remarked that, given the aim of the session to provide guidance for policy makers, perhaps the overarching theme that had emerged was the relative absence of concrete evidence with respect to the operation of the copyright system, especially outside the context of the music industry. Greater emphasis should be placed upon the role of policy makers in generating such evidence and not merely consuming it. One means of doing so is to provide funding, as, for example, the UK government has done. By contrast, much of the private funding in this area has been withdrawn in recent years, so there is an increased need for alternative public funding. Additionally, much useful data can be generated through national surveys and national economic accounting of creative industries, something the US’s Bureau of Economic Analysis has become involved in recently. Policy makers might also consider the reintroduction of some formalities for copyright, such as registration.

A delegate from Spain noted that three essential pillars for copyright reform emerge from the discussion: exploitation, enforcement and education. Governments have a role to play in all three areas. In terms of exploitation there is a need to balance the rights of copyright owners and consumers, to facilitate a reduction in transaction costs, and to review the existing limitations and exceptions to ensure that these keep tracking with the emerging technology and societal requirements. There is also a need to ensure proper remuneration of creators. In terms of enforcement, secondary liability appears to be increasingly important. Finally, education is crucial as a means by which to inform users of the underlying value of copyright.

Mr Clayton echoed earlier pleas for future research. Disentangling personal use from fair use is important, the former being concerned (despite the nomenclature) primarily with fairness to consumers. Term extensions do not appear to be a particularly pressing issue. Enabling licencing markets to function is critical, but the UK had found it more difficult than anticipated to get the Copyright Hub to work well. Some successful examples exist, however, albeit on a smaller scale, such as the Stanford Exchange. The enforcement framework should reinforce the creative incentive of the copyright system. The Chinese example is promising, where enforcers pursue infringing websites rather than consumers. In summing up the conclusions of this discussion, it is important to ask, “what would consumers think?”

A delegate from the Netherlands remarked that the discussions had underlined the importance of trade secrets and copyright in general terms, but there was a relative absence of consideration of the specific added value that these mechanisms can create. He suggested that conventional mechanisms might not work so well in terms of generating added value in the digital environment. The suggestion that copyright is used as a protectionist tool is worrying, and may merit further attention. In relation to consumer education, it is inadvisable to place too heavy a responsibility on individual consumers to understand the limitations of their rights when they purchase copyrighted content; greater responsibility should perhaps lie with those who sell such material.

A delegate from Canada noted that a key consideration underlying Canada’s copyright reforms in 2012 was the need to rebalance the interests of rights holders and users. In reality, the delegate noted, businesses often deploy a wide variety of IP instruments, and so it would also be useful to give further consideration at some point in the future to the ‘IP bundle’, that is, the extent to which various forms of IP overlap and interact, and whether the existing IP framework can account for these interactions.

The workshop then came to a conclusion.

## NOTES

<sup>464</sup> Here “society” is intended to mean society in an economy-wide sense, not consumers alone, so the societal benefits we focus on are factors like innovation, productivity, and GDP growth. Also, the exchange concept is weaker with respect to copyright than patents, but there is still a give and take in the sense that copyright protection eventually expires and certain exceptions apply to it, while the copyright provides a stronger incentive to create and disseminate content.

<sup>465</sup> Acceluction is a portmanteau term that fuses the concepts of acceleration and production of links. Acceluction has been proposed by Ahmed Bounfour as a means of characterising the new production mode of firms in relation to the digital transformation. It originated within the work of the international research programme ISD: see Ahmed Bounfour, *Acceluction in action*, 2011, Paris, Cigref Foundation, [www.fondation-cigref.org](http://www.fondation-cigref.org).

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