

3. INTELLECTUAL PROPERTY POLICY FOR INTERNET PLATFORMS

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ABSTRACT

The internet as a platform is a key driver of the current internet economy. Its multi-sided nature however presents difficulties for the application of current intellectual property regimes which are traditionally founded upon and applied in the conventional one-sided economic ecosystem. Accordingly, the question of how to reconcile intellectual property rights and the two-sided nature of internet platforms has become a pivotal point of consideration for all internet governance discussions; new rules are needed for the good and sound development of internet platforms. This paper aims to solve such incompatibility by suggesting several measures. For one, it argues that since internet platform operators are the major controllers of such platforms, they are best placed to control infringing activities on those platforms. Hence, platform operators ought to be considered as indirectly infringing on a third party's intellectual property rights where platform users directly infringe on such rights. Technology neutrality is also a key principle for internet policy. Importantly, intellectual property rules should not favour or discriminate against specific platform technologies. For online created content, the transformative use principle may be a useful tool for balancing intellectual property protection and online content creation. Cross-border operation of online platforms should also be categorised as E-commerce. Accordingly, the international society should establish a uniform framework for the imposition of liability on internet platforms under the E-commerce treaties while

allowing for a degree of flexibility to cater to varying development levels of the internet economy.

Keywords: *Internet platform, two-sided market, intellectual property rules, balance of interest, and technology neutrality*

1. INTRODUCTION

The disruptive power of internet platforms is radically changing businesses, the economy, and society at large. Companies such as Amazon, Alibaba, Facebook, Google, and Uber are creating online structures that enable a wide range of human activities, consequently paving the way for radical changes in how we work, socialize, create value in the economy, and compete for the resulting profits. While economic growth as a whole is slow in most of the G-20 countries, the internet economy is predicted to grow at an annual rate of 8 per cent, far outpacing growth in more 'traditional' sectors.¹ The internet is set to contribute \$6.6 trillion a year, or 7.1% of the total GDP in the G20 countries.² Platforms have hence become an important economic force with a total market value of \$4.3 trillion and an employment base of at least \$1.3 million direct employees and millions of others indirectly employed.³ Platforms have proven to be the drivers of innovation in the digital economy and can be expected to be important drivers towards the further development of the sharing economy.⁴ One study shows that 18 important platforms accounted for about 25% of all internet traffic by the end of 2015. This study also shows that these platforms represent indeed a large and growing part of total web-based activity.⁵ The platform age is upon us because of the development of powerful information and communication technologies that have lowered the cost and increased the reach of connecting platform sides.⁶

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¹ Expert Group on Taxation of the Digital Economy, 'Working Paper: Digital Economy - Facts & Figures' (European Commission, 13 March 2014) <https://ec.europa.eu/taxation_customs/sites/taxation/files/resources/documents/taxation/gen_info/good_governance_matters/digital/2014-03-13_fact_figures.pdf>(accessed July 2018).

² Kathryn Brown, 'Securing Our Digital Economy' (Internet Society, 7 April 2017) <<https://www.internetsociety.org/blog/2017/04/securing-our-digital-economy/>>(accessed 8 June 2018).

³ Peter C. Evans and Annabelle Gawer, *The Rise of the Platform Enterprise: A Global Survey* (The Center for Global Enterprise 2016).

⁴ European Commission, *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: A Digital Single Market Strategy for Europe – Analysis and Evidence*, 6 May 2015, at 53.

⁵ Bertin Martens, 'An Economic Policy Perspective on Online Platforms' Institute for Prospective Technological Studies Digital Working Paper 2016/05, JRC101501 <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2783656> (accessed 8 July 2017).

⁶ David S. Evans, Richard Schmalensee, *Matchmakers: The New Economics of Multisided Platforms*, Harvard Business Review Press, 2016. at 40.

Intellectual property is the most important asset for such platforms and also a key driver of their growth and expansion. Over the recent years, the question of how to reconcile intellectual property rights and technologies and platforms that are based on the internet has become a pivotal point of consideration for all internet governance discussions. This paper argues that the current intellectual property rules, founded on and applicable only to one-sided markets, are inappropriate for multi-sided internet platforms. Instead, new rules are needed for their good and sound development. This paper will proceed as follows: First, section II will analyse the definition of an internet platform. This entails categorising the different types of internet platforms and discussing the economics of such internet platforms. Second, section III will demonstrate that the current intellectual property regime is inappropriate for the governance of internet platforms. Finally, section IV proposes methods to reconcile intellectual property rules with the internet platform ecosystem.

2. DEFINING INTERNET PLATFORMS

There is no single definition of platforms. One formulation of a platform is 'a business based on enabling value-creating interactions between external producers and consumers.'⁷ In other words, a platform uses technology to connect people, organizations, and resources in an interactive ecosystem in which massive amounts of value can be created and exchanged.⁸ In economics, platforms are known as "two-sided" or "multi-sided" markets⁹ where two or more types of users are brought together by a platform to facilitate an exchange or a transaction. The internet platform is a software-based product or service that serves as a foundation on which outside parties can build complementary products or services. It is an extensible software-based system that provides the core functionality shared by mobile applications (APPs) that interoperate with it, and the interfaces through which they interoperate.¹⁰ As an online market place where

two or more distinct types of users (for instance, buyers and sellers) can meet to, amongst other things, exchange goods, services, and information, the internet platforms are hence "two sided" markets. Online users can be buyers and sellers, advertisers, software developers, social media users, etc.

Different types of internet platforms can however, have very different business models. Specifically, different platforms have very different control mechanisms in relation to the creation and dissemination of intellectual property information on the platforms. The different business models in turn, have an implication on intellectual property rules, as will be explored below.

What is pertinent to note is that internet platforms are different from traditional businesses; they often do not fit well into the normal regulatory system. Regulators therefore need to have a good understanding not only of platforms generally, but also the role that specific platforms play in the market, including the source of the value they create, their relationship to customers and competitors, and the alternatives to them.¹¹ The value of internet platforms lies in their indirect network effect.¹² Known as network externalities or Metcalfe's law¹³ in economics, the network effect refers to the degree to which every additional user of a platform or app makes it more valuable to every other existing user. As an example, Facebook will have zero value to its first user. However, as the number of Facebook users increases, so does Facebook's value. The reason is simple: each additional user dramatically increases the number of other users that existing users can interact with.¹⁴

Economists now know that many of the theories derived over the last century for traditional firms are inappropriate for internet platforms.¹⁵ This is because unlike the traditional business "pipeline" system with a linear value chain, online platforms are nonlinear. Online platforms, producers, consumers, app developers, and the platform itself enter into a variable number of relationships. In a platform, different types of users are

⁷ Geoffrey Parker, Marshall Alstyne, Sangeet Choudary, *Platform Revolution* (WW Norton 2016) 5.

⁸ *ibid* 3.

⁹ For detailed descriptions of multi-sided markets, see Jean-Charles Rochet and Jean Tirole, 'Platform Competition in Two-Sided Markets' (2003) *Journal of the European Economic Association* 1(4): 990-1209; and David S, Evans, Richard Schmalensee, *Matchmakers: The New Economics of Multisided Platforms* (Harvard Business Review Press 2016) 8-37. Single sided markets feature a linear value chain, which means a step-by-step arrangement for creating and transferring value with producers at one end and consumers at the other. Conversely, multi-sided markets are economic platforms having two or more distinct user groups that provide each other with network benefits. This kind of market has the potential to scale and generate value in a non-linear manner. In other words, the

whole of the value created by a multi-sided market can be more than the sum of the parts, if the multi-sided market is correctly structured.

¹⁰ Amrit Tiwana, *Platform Ecosystems: Aligning Architecture, Governance, and Strategy* (Morgan Kaufmann 2013) 5.

¹¹ Joseph Kennedy, *Why Internet Platforms Don't Need Special Regulation*, (Information Technology & Innovation Foundation 2015) 2.

¹² Network effects may be either direct or indirect. To understand the difference between direct and indirect network effect, see, Matthew T Clements, 'Direct and Indirect Network Effects: Are They Equivalent?' (2004) *International Journal of Industrial Organization* 22(5):633-645.

¹³ Tiwana (n 10) 33.

¹⁴ *ibid*.

¹⁵ Evans & Schmalensee (n6) 15.

connected and interacted with each other through the resources provided by the platform. Some users are producers, some users are consumers, and some users play different roles at various times. And all the users are interconnected and interdependent. The appropriate rules for internet platforms must thus account for the fact that the demands by the customers on various sides of the platform are interdependent.

The platform economy also has different model to make a profit. Traditionally, business could not profit if they gave their products away for free. This is however not the case for multi-sided firms; such firms can serve one group of participants for free, or even pay them to participate, and still profit. All those are contributed to the same and cross-side network effect. If only one-side effect exists, no one will pay the cost. But if a cross-side network effect exists, the participants on one side can compensate for participants on the other side.

3. INAPPLICABILITY OF INTELLECTUAL PROPERTY RULES FOR INTERNET PLATFORMS

A. THEORIES OF INTELLECTUAL PROPERTY

Traditional intellectual property rules came into being after central authorities who, after a delicate balancing of competing interests and in the name of the general welfare, created statutory rights to intellectual achievements.¹⁶ Consequently, the utilitarian theory has long provided the dominant paradigm for analysing and justifying the various intellectual property rules.¹⁷ The utilitarian theory states that we have intellectual property systems because it benefits society.¹⁸ Specifically, the traditional justification for intellectual property is premised on a cost-benefit trade-off; intellectual property rights impose social costs on the public, and are only justified to the extent that such rights do encourage enough creation and dissemination of new creations to offset those costs.¹⁹

It is commonly thought that the intellectual property ecosystem comprises of different stakeholders with competing interests. Intellectual property laws hence aim

to balance the competing interests of different participants.²⁰ For example, the US Copyright Act strives to attain a difficult balance between the interests of authors and inventors in the control and exploitation of their writings and discoveries on the one hand, and society's competing interest in the free flow of ideas, information, and commerce on the other hand.²¹ Similarly, patent law aims to strike a delicate balance between two prongs of social desire: the desire to encourage initial invention, and the desire to ensure the availability of that invention both for its initially intended use and for its use as a basis for further invention.²² Likewise, trademark law is crafted with the goal of balancing the interests of trademark holders against the interests of expressive users.²³

B. INTELLECTUAL PROPERTY RULES ARE INAPPROPRIATE FOR GOVERNING THE INTERNET PLATFORMS ECOSYSTEM

With the emergence of the internet as a means of communication, creativity, innovation, and ideas, and with the growing accessibility to information, traditional concepts of intellectual property appear increasingly antiquated and inapplicable in a space where information is democratised, people are increasingly more empowered to create, exchange, and distribute content, and innovation and creativity proliferate.²⁴ Such incompatibility is due to two reasons:

First, the economic rationales of both systems differ. Intellectual property rules are based on classic economic theories that emphasise laws of market supply and demand of the one-sided market. That is to say that current intellectual property rules are formulated to operate in a traditional linear market. However, as explained above, the internet platform economy is a non-linear multi-sided market. The internet platform is a complex system comprised of numerous interacting subsystems.²⁵ A complex system is a system composed of many components that may interact with each other. Accordingly, the behavior of a complex system is unpredictable. As a nonlinear system, the change of the

¹⁶ Tom W. Bell, *Intellectual Privilege: Copyright, Common Law, and the Common Good* (Mercatus Center at George Mason University 2014) 167.

¹⁷ Robert P. Merges, Peter S. Menell, Mark A. Lemley, *Intellectual Property in the New Technological Age* (6th edn, Aspen Publishers 2012) 10-11.

¹⁸ Balew Mersha and Kahsay Debesu, 'Theories of Intellectual Property' (*Abyssinia Law*, 2 April 2012) <<http://www.abysinnialaw.com/study-on-line/item/468-theories-of-intellectual-property>> (accessed 6 Oct 2017).

¹⁹ Mark A. Lemley, 'The Economics of Improvement in Intellectual Property Law' (1997) *Texas Law Review* Vol. 75, 989.

²⁰ To understand how the intellectual property system balances different competing interests in greater detail, see Robin

Mansell and W. Edward Steinmueller, 'Intellectual property rights: competing interests on the internet' (1998) *Communications and Strategies*, 30 (2): 173-197.

²¹ *Sony Corp. v. Universal City Studios, Inc.*, 464 U.S. 417, 429 (1984).

²² John M. Golden, 'Biotechnology, Technology Policy, and Patentability: Natural Products and Invention in the American System' (2001) 50 *Emory Law Journal* 101, 104.

²³ Pierre N. Leval, 'Trademark: Champion of Free Speech' (2004) 27 *Colum J.L. & Arts* 187.

²⁴ Konstantinos Komaitis, 'Internet! Society Issues Paper on Intellectual Property on the Internet' (Internet Society 2013) <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2304124> (accessed 23 Oct 2017).

²⁵ Tiwana (n 10) 6.

output in a complex system is also not proportional to the change of the input.²⁶ The traditional intellectual property rules exist in a somewhat linear system with some well-defined boundaries where the role each participant takes is plain and clear. The situation is different for nonlinear internet platforms where the participants' roles and interests are not always clearly defined and may even change with time. For one, end-users can also be producers. Accordingly, current intellectual property rules which are based on simple one-sided markets cannot apply to complex internet platforms. Accordingly, the current intellectual property rules are incompatible with and should not be applied to internet platforms.²⁷

Second, the interests of different stakeholders in the internet platform ecosystem are interdependent. The network effect of internet platforms hence results in the interests of stakeholders being complementary instead of conflicting. Since the core of intellectual property rules is to balance competing interests of different stakeholders, existing rules are inappropriate in an environment where conflicting interests are not the main phenomena.

4. INTELLECTUAL PROPERTY RELATED ISSUES ARISING FROM INTERNET PLATFORMS

A. INTELLECTUAL PROPERTY RELATED STAKEHOLDERS

With internet platforms as an information integration and dissemination avenue, intellectual property laws in protecting original and inventive creations are crucial for encouraging the construction of such online infrastructures. Therefore, platform operators and the relevant stakeholders must adopt measures to protect intellectual property rights. Nevertheless, this begs the question as to who should be responsible for such protection and if one party does assume such duty, what measures to adopt.

B. OWNERSHIP

Intellectual property can be created by different participants of online platforms, e.g. platform operators, app developers, external producers, and end users. The platform managers and sponsors control the intellectual property that underlines the platform (such as the

software code that controls its operation), and allocation of other rights.²⁸ Platforms that choose to encourage extension developments by granting a high degree of openness will usually create an Application Programming Interface (API),²⁹ which is sometimes copyrightable.³⁰ Applications developed by APP developers are certainly protected by intellectual property laws. The issue however lies in who owns the initial copyright in user-generated content (UCC), which is content created by end users on various internet platforms. UCC usually often appears as supplements to online platforms, such as social media websites, and may include content types such as blog posts, wikis, videos, or comments. Given the myriad of participants in the internet platform ecosystem, the question of ownership over UCC is difficult to answer. It is difficult to determine ownership of UCC even if other forms of ownership are more established.

C. USE

Generally, all participants on the internet platform ecosystem utilise some kind of intellectual property rights, which are created by himself or herself, other participants, or outsiders. There is no doubt that authorised use of intellectual property rights is legal. However, uncertainty as to the legality of unauthorised usage lingers. For example, can platforms and APP operators make use of UCC even if such use is beyond the scope of the parties' contract? Can outsiders freely collect, and use the big data and content on such platforms?³¹ Can internet content providers use other persons' intellectual property without infringing others' rights? Can internet service providers be held responsible for overseeing end users' activities? Can end users freely use any kind of intellectual property created on and off the platform by different participants? All these questions remain unanswered.

D. INFRINGEMENT

One externality of the internet platform ecosystem is the infringement of third parties' intellectual property rights. Amongst all platform participants, platform operators and app developers are likely to use a third party's intellectual property to create the platform structure and APPs. If such use is unauthorised, these infringing

²⁶ Geoff Boeing, 'Visual Analysis of Nonlinear Dynamical Systems: Chaos, Fractals, Self-Similarity and the Limits of Prediction' (2016) *Systems* 4(4): 37.

²⁷ Julian Wright, 'One-sided Logic in Two-sided Markets' (2004) *Review of Network Economics* 3(1).

²⁸ Parker (n 7) 135.

²⁹ *ibid* 143.

³⁰ See *Oracle America, Inc. v. Google, Inc.* 740 F. 3d 1381 (2014). Some scholars firmly object to the idea of copyrighting API, see, Mike Masnick, 'Why Making APIs Copyrightable Is Bad News For Innovation' (*Techdirt*, 13 May 2014)

<<https://www.techdirt.com/articles/20140509/17140227184/why-making-apis-copyrightable-is-bad-news-innovation.shtml>> (accessed 12 October 2017).

³¹ In the case of *HiQ Labs, Inc. v. LinkedIn, Corp.*, 2017 WL 3473663 (N.D. Cal. Aug. 14, 2017), the court held that HiQ Labs, Inc had the right to access, copy, or use public information available on LinkedIn's website. Conversely, in a Chinese case of *Sina Inc., v. Maimai*, JING 73 MIN ZHONG 588 (2016), the Beijing IP Court held that a matchmaking website could not extract the publicly available personal information of Weibo users.

activities are no different from the traditional offline intellectual property rights infringement. What is controversial here is who is liable for these infringing materials made available to the public by the end users. A related query for determination is whether technology neutrality can then be used to exempt, if found liable, platform operators from liability.

Another issue concerning UCC is the question of who is responsible where UCC infringes on a third party's intellectual property rights.³² To answer the aforementioned question, we have to determine who benefits from these infringing activities and out of those who benefit, which party benefits the most. As the major controller of the internet platform, the operator is in the best placed position to prevent the participants' from conducting infringing activities. However, the kinds of duties imposed on platform and APP operators to prevent UCC from infringing on third party rights are currently uncertain. As of now, various courts adopt a wide range of approaches: some courts press the operator to take active measures to monitor the infringing activities³³ while other courts only require initiatives preventing further infringement.³⁴ It should also be noted that not all platform operators share the same business models; some platforms directly provide their owned or licensed content to end-users while some platforms are tools for only information aggregation, sharing, and integration. Accordingly, the type and extent of liability has to be tailored to the specific business model of the platform in question.

The differences in intellectual property policy and legal systems across various jurisdictions also make the regulation of transnational platforms extremely difficult. Specifically, some countries require a platform to follow its domestic intellectual property rules, even if that platform has no physical existence in that country, because the end users can access that platform's services.³⁵ In contrast, some countries only regulate those platforms that have physical operations in those countries.³⁶ The inconsistent application of domestic intellectual property rules highlights a pressing need to harmonise the regulation of platform related intellectual

property rights policies in order to ensure the sound operation of these international platforms.

5. RECONCILING INTELLECTUAL PROPERTY RULES WITH THE INTERNET PLATFORM ECOSYSTEM

Over the recent years, the question of how to reconcile intellectual property rights and the internet technologies and platforms has become a pivotal point for consideration in all internet governance discussions.³⁷ The ultimate art in shaping intellectual property policies lies in securing outcomes that are proportionate to the aim of the protection of human achievement.³⁸ With almost all giant internet companies possessing some kind of internet platform, the online platform economy is the main driving powerhouse of economic development today. One study challenges the conventional wisdom that holds that strong intellectual property rights undergird innovation. The author in that study points out that American judges and legislators altered the law at the turn of the Millennium to promote the development of internet enterprise. Europe and Asia, by contrast, imposed strict intermediary liability regimes, inflexible intellectual property rules, and strong privacy constraints, impeding local internet entrepreneurs. Innovations that might be celebrated in the United States could lead to imprisonment in Japan.³⁹ Accordingly, relaxing intellectual property liability rules for internet platforms is the best option for the Internet economy.

Generally, internal platform stakeholders such as controllers, managers, and APP developers may possibly infringe third party's intellectual property. These kinds of infringements are no different from traditional ones. What is unique here however, are the end-users' infringing activities, which is a type of negative externality arising from the use of Internet platforms. The difficulty of eliminating such negative externality lies in the sheer number of end users; it is economically infeasible to hold individual end users responsible. Accordingly, the intellectual property right holder generally holds the platform and app developers responsible for their users. However, the kind and extent of liability which should be imposed on such developers requires further consideration. Too strict a liability will have a chilling effect on such developers and may in turn, stifle the

³² WIPO, 'IP and Business: IP in the Brave New World of User-Created Computer Games' (2007) <http://www.wipo.int/wipo_magazine/en/2007/01/article_0006.html> (accessed 15 July 2017).

³³ *SABAM v. S.A. Tiscali Scarlet*, N° 04/8975/A, District Court of Brussels, 29 June 2007.

³⁴ Paula Vargas, 'Argentina's Supreme Court Decides Landmark Intermediary Liability Case' (2015) <<http://www iptjournal.com/argentinas-supreme-court-decides-landmark-intermediary-liability-case/>> (accessed 21 May 2017).

³⁵ Andrew F. Christie, 'Private International Law Issues in Online Intellectual Property Infringement Disputes with Cross-Border

Elements' (2015) <http://www.wipo.int/edocs/pubdocs/en/wipo_rep_rfip_2015_1.pdf> (accessed 8 June 2017).

³⁶ Yulia A. Timofeeva, 'Worldwide Prescriptive Jurisdiction in Internet Content Controversies: A Comparative Analysis' [2005] 20 Conn. J. Int'l L. 199, 201.

³⁷ Komaitis (n 24).

³⁸ William Cornish and David Llewelyn, *Intellectual Property: Patents, Copyright, Trade Marks and Allied Rights* (6th edn, Sweet & Maxwell 2007) 3.

³⁹ Anupam Chander, 'How Law Made Silicon Valley' (2016) 63 Emory Law Journal 639.

platform ecosystem. Consequently, the interests of different stakeholders must be carefully balanced; all rules and policy should promote disruptive innovation while protecting intellectual property rights.

A. COMPETING & COMPLEMENTARY INTERESTS

In digital platforms, the interests of internal participants are generally not competitive; all intellectual property creators in a platform hope to increase the value unity of the platform and contribute all the intellectual properties to make that happen. Value unity is crucial for platform participants. Each participant creates and uses some values in the online platform, which are the binders bringing all participants together. Different value units represent different interests of different intellectual property holders. The interests of internal intellectual property right holders of a platform are thus always complementary.

The main competing interest is that of external intellectual property holders and platform participants - the intellectual property ecosystem's main concern is protecting third parties' intellectual property interests. During the platform operations, it is mostly the end user who makes the intellectual property resources available online and uses third parties' intellectual property resources. It hence appears that only the end users generally use third parties' intellectual property resources. Nevertheless, platform operators and app developers can somehow control or manage the flow of intellectual property information. Further, given that platform and APP operators profit through end-users' illegal infringement, it is reasonable to impose some kind of liability on such operators. It is however worth noting that the controlling capacity of different platforms varies. As such, the various controlling models under different internet platforms must be considered in determining the liability, and extent, if any, of platform participants.

B. ONLINE CREATED CONTENT

The present online platform governance focuses on the protection of outsiders' intellectual property rights, with

most legislative and judicial practices elaborating on what measures platform and APP operators should take to protect third parties' intellectual property if those platform and APP operators qualify as internet service providers (ISPs).⁴⁰

Apart from the protection of outsiders' intellectual property, the next pressing concern for most Internet platform participants is the protection of online created content. The online created value is crucial to the sound and good operations of platform. However, not all online created content can be protected by intellectual property rules.⁴¹ For that online created content that is indeed protected, there remains the conundrum of who owns it, and how to best protect it.

Generally, most content created by end-users is based on existing materials, e.g. remixes, samples, mashups, etc. The first question is whether this UCC is legitimate. It appears that there is no blanket answer to this question; instead, the legitimacy of such content should be decided on a case-by-case basis. The second question is then whether there is any applicable principle for determining the legality of this UCC. Thus far, there appears to be no fair dealing exception for mashups or remixes which are highly transformative, non-commercial derivatives that do not compete with the primary market of the copyright owner.⁴² In this respect, the transformative use⁴³ principle may be a useful tool for ensuring intellectual property protection while encouraging the creation of online content. UCC that is highly transformative, non-commercial derivatives that does not compete with the primary market of the copyright owner should be deemed as fair use, and legitimate while that UCC which is detrimental to the original copyright holders and can be a substitute for the original works should be considered illegitimate.

From a legal perspective, creators of online content are the owners of those content related intellectual property rights while the platform and App operators themselves have broad rights to exploit such UCC commercially through their contract with platform users. While the

⁴⁰ Though there are no clear laws on the liabilities of online platform and app operators, most countries have stipulated laws on ISP's liability, e.g. the 1998 Digital Millennium Copyright Act (DMCA) in the United States of America, the 2000 European Union E-commerce Directive 2000/31/EC and the 2006 Regulation on the Protection of the Right of Communication through Information Networks in China. For a detailed explanation of ISP liability in different countries, see Song, Seagull Haiyan, 'A Comparative Copyright Analysis of ISP Liability in China versus the United States and Europe' (2010) *The Computer & Internet Lawyer* 27(7), <https://ssrn.com/abstract=2118961> (accessed 29 June 2017).

⁴¹ Information can only be protected after they meet some kinds of thresholds, e.g. only original expressions can be protected by copyright law.

⁴² Damien O'Brien and Brian Fitzgerald, 'Mashups, Remixes and Copyright Law' (2006) *Internet Law Bulletin* 9(2): 17-19.

⁴³ 'Transformative use' generally refers to uses of pre-existing works for the creation of something new, that is not merely a substitute for the pre-existing work. Transformative use is a relatively new addition to fair use law, having been first raised in a Supreme Court decision in 1994. (*Campbell v. Acuff-Rose Music* 510 U.S. 569 (1994)). A derivative work is transformative if it uses a source work in completely new or unexpected ways. Importantly, a work may be transformative, and thus a fair use, even when all four of the statutory factors of fair use would traditionally weigh against fair use! See University of Minnesota, 'Copyright Services – Understanding Fair Use' <<https://www.lib.umn.edu/copyright/fairuse>> (accessed on 15 July 2017).

typical online platform end-user does not expect to profit from his work, for the sophisticated user who expects to derive a profit from his work in the future, the value of the free flow of ideas and information outweighs the potential losses of unauthorized exploiting of their IP rights. In any event, sophisticated users have options when it comes to posting their content on a platform, including the option to create new sites and new avenues to share their work. The market hence corrects the imbalances.⁴⁴

C. TECHNOLOGY NEUTRALITY

Since 2011, technology neutrality was recognized as a key principle for Internet policing.⁴⁵ Technology neutrality means that the same regulatory principles should apply regardless of the technology used. In other words, regulations should not be drafted in technological silos.⁴⁶ Technology neutrality is used to define the scope of regulation. Wherever possible, regulators are to ensure that their rules are technology neutral. The first implication is that regulators should apply the same principles of market analysis and remedies to all kinds of platforms. The second implication of technology neutrality is that regulators should not be biased towards or against particular types of technologies. Technology *per se* is not bad or good and the regulator should not base the liability of a platform on the particular technology it adopts.

In the context of intellectual property, the principle of technological neutrality recognises that intellectual property laws should not be interpreted or applied to favor or discriminate against any particular form of technology, and that intellectual property rules should not have an adverse impact on innovation and the freedom of speech. The goal of technological neutrality is thus to preserve the traditional balance between intellectual property owners and users in the digital environment.

The principle of technological neutrality is important in not only defining the boundaries of the rights granted under the law, but also in setting the compensation payable for the exploitation of those rights.⁴⁷ Technological neutrality hence constrains the judicial impulse to impose legal duties on platform and APP operators. Where there is significant uncertainty of how the technology will impact the interests of different stakeholders due to rapid technological and market changes, regulators should refrain from imposing a remedy. In fast-moving markets, the perceived harms are often addressed by the market, making regulatory remedies not always necessary.⁴⁸ Hence, when applying intellectual property rules to platforms, technological neutrality rule must also be taken into account.

D. INDIRECT LIABILITY

The liability of different platform participants arising from the infringement of intellectual property varies. In practice, most intellectual property holders hold platform operators legally liable for such infringements because direct infringers are difficult to find and sue. Further, since platforms, not users, cash in on online information, most intellectual property regulations concerning platform operators focus on indirect liability. Inconsistent indirect infringement rules across various jurisdictions⁴⁹ however render it difficult for platform operators to determine the kind of measures they must adopt to comply with the law: some jurisdictions require the platform operators to take precautionary measures to prevent any infringing activities; some only require the platform operators to take measures to prevent further infringing activities; some require the platform operators to have specific knowledge of specific infringing activities; some only require the platform operators to have general knowledge of general infringing activities. The different liability regimes for platform operators are not only detrimental to the development of platforms in that they leaves platform operators uncertain as to when and where legal liability can arise, but are further complicated

⁴⁴ Will Clark, 'Copyright, Ownership, and Control of User-Generated Content on Social Media Websites' <<http://www.kentlaw.edu/perritt/courses/seminar/papers%202009%20fall/Jerry%20clark%20final%20Copyright,%20Ownership,%20and%20Control%20of%20User-Generated%20Content%20on%20Social%20Media%20Website.s.pdf>> (accessed 21 October 2017).

⁴⁵ The Organization for Economic Co-operation and Development (OECD), *OECD Council Recommendation on Principles for Internet Policy Making* (2011).

⁴⁶ Winston J. Maxwell and Marc Bourreau, 'Technology Neutrality in Internet, Telecoms and Data Protection Regulation' (2015) 21 *Computer and Telecommunications Law Review* 1.

⁴⁷ *Canadian Broadcasting Corp. v. SODRAC 2003 Inc.*, 2015 SCC 57.

⁴⁸ Maxwell and Bourreau (n 49).

⁴⁹ For different indirect liability rules for online platforms, see Yang Cao, 'Indirect Infringement of Intellectual Property in China' (2016) *Queen Mary Journal of Intellectual Property* 6(2):248-259 and Anupam (n 39). Yang Cao points out that the state of mind is crucial for a platform operator to incur indirect liability for infringement. Nevertheless, different countries, and even different courts in the same country adopt very different standards for this mental element. The state of mind required for rendering indirect liability thus far includes "Knowledge"; "Have reason to know"; "Should know"; "Willful blindness"; "Recklessness"; "Red flag rule", etc. Anupam emphasizes that the differences in the American and European indirect liability regime is one of the most important contributors for the different development levels of the online economy across the Atlantic Ocean.

where platforms operate across various countries. As internet platforms are the major driving force for the internet economy, it is in all countries' interests to unify the liability of platform participants with the World Trade Organization arena as the best avenue for such harmonisation.

E. INTERNATIONAL HARMONIZATION OF INTELLECTUAL PROPERTY LIABILITY OF INTERNET PLATFORMS

Currently, the TRIPs Agreement provides uniform protection for intellectual property globally by setting out the minimum standards of protection each Member state must provide.⁵⁰ Notably, the TRIPs Agreement, in embodying the traditional intellectual property system that is based on national laws, is not tailored to suit the digital environment. These differing characteristics result in the task of implementing the shared objective of protecting authors, performers and other copyright holders in the digital environment under TRIPs more challenging.⁵¹

Although there is no international rule which specifically regulates cross-border online platform economic activities, these activities can be categorised as a kind of E-commerce. E-commerce refers to the process of buying or selling products or services over the internet. Most online platforms are considered providers of information services, which are often regulated under e-commerce laws. As of now, the 1998 WTO Work Programme on Electronic Commerce, the United Nations Commission on International Trade Law (UNCITRAL) Model Law on Electronic Commerce,⁵² the 2005 UN Convention on the Use of Electronic Communications in International Contracts,⁵³ and the United Nations Guidelines on Consumer Protection⁵⁴ regulate e-commerce. At the European level, there exists the 2000 directive of the European Parliament and of the Council on certain legal aspects of information society services, in particular electronic commerce, in the internal market,⁵⁵ the 2004 Directive on the enforcement of intellectual property rights,⁵⁶ and the 2014 Regulation on electronic

identification and trust services for electronic transactions in the internal market.⁵⁷

Notwithstanding the above, there is no specific legal rule dealing with the protection of intellectual property and the liabilities of the online platform economy for infringements. Further, there is no international consensus about the legal status of online platforms. Most online platforms provide some kinds of online information service, so the online platforms can be regarded as a kind of internet Service Provider (ISP) and thus, have the status of internet intermediary. Unfortunately, there is no specific legal rule dealing with ISPs from an international law perspective to date. Consequently, the varying domestic rules on liabilities inevitably provide loopholes for service providers to escape liability. The suggested solution to this problem is to establish a uniform framework for the imposition of liability on internet platforms. Importantly, some degree of flexibility should be included i.e. granting each country the right to adopt its own level of protection. Doing so will better accommodate the different levels of development of the online platform economy.

6. CONCLUSION

The online platform is the key driving force for the current online economy. Due to the traditional economic foundation of current intellectual property rules, such legal principles are however, incompatible with the unconventional digital environment. Reconciling intellectual property rights with modern internet technologies and platforms has hence, become a pivotal point of consideration for all internet governance discussions. With regard to the novel issue of the infringement of third party intellectual property rights in the digital environment, this paper first suggests that since internet platform operators are the major controllers of such platforms, they are best placed to control infringing activities online. When assessing their liability, technology neutrality should be upheld. In other words, the same intellectual property principles should apply to different platforms. Second, the focus of platform regulations should be on platform controllers

⁵⁰ WTO, 'Overview: the TRIPs Agreement' <https://www.wto.org/english/tratop_e/trips_e/intel2_e.htm> (accessed 19 October 2017).

⁵¹ A proposal submitted by Brazil to the World Trade Organization entitled *Electronic Commerce and Copyright* (JOB/GC/113, JOB/IP/19) in December 2016.

⁵² United Nations Commission on International Trade Law (UNCITRAL), *UNCITRAL Model Law on Electronic Commerce 1996: with additional article 5 bis as adopted in 1998* (United Nations, 1998).

⁵³ United Nations Convention on the Use of Electronic Communications in International Contracts, New York, 23 November 2005, *United Nations Treaty Series*, vol. 2898, Doc. A/60/515.

⁵⁴ Department of Economic and Social Affairs, *United Nations Guidelines for Consumer Protection* (New York: United Nations, 2003).

⁵⁵ Council Directive 2000/31/EC of the European Parliament and of the Council of 8 June 2000 on certain legal aspects of information society services, in particular electronic commerce in the internal market [2000] OJ L178/1.

⁵⁶ Council Directive 2004/48/EC of the European Parliament and of the Council of 29 April 2004 on the enforcement of intellectual property rights [2004] OJ L195/16.

⁵⁷ Council Regulation 910/2014 of the European Parliament and of the Council of 23 July 2014 on electronic identification and trust services for electronic transactions in the internal market and repealing Directive 1999/93/EC [2014] OJ L257/73.

and APP developers. Any new regulations must also balance the competing interests of platform operators and external intellectual property holders. Third, countries should resort to the WTO arena to unify the rules governing platform operators' liability. Last, the indirect infringing rule is the best measure for regulating a platform's intellectual property liability from both the technological and economic perspectives. Instead of being obliged to monitor their services and responsibility arising only after they have knowledge of infringing activities, platform operators should be tasked with properly managing their services. It is when this duty of management is unsatisfied that legal liability will then arise.

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