

Distributive Justice beyond Intellectual Property Laws

An International Perspective

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INTRODUCTION

The United Nations recently adopted seventeen global Sustainable Development Goals (SDGs) to ensure that by 2030 all people enjoy peace and prosperity, with no one left behind. Among the SDGs that countries have committed to are the following: no poverty, zero hunger, good health and well-being, quality education, gender equality, affordable and clean energy, decent work, peace and justice, industry, innovation, and infrastructure.¹ The SDGs are more powerful tools than U.N. declarations since they target specific goals within time limits, have quantifiable outcomes, and involve the responsibility and commitments of countries around the globe, especially developed countries.² However, in the digital era, where rapid

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¹ See *Sustainable Development Goals*, UNITED NATIONS DEV. PROGRAMME, www.undp.org/sustainable-development-goals (last visited July 21, 2022); see also SAKIKO FUKUDA-PARR, *MILLENNIUM DEVELOPMENT GOALS: IDEAS, INTERESTS, INFLUENCE* (2017); Sakiko Fukuda-Parr, *Millennium Development Goals: Why They Matter*, 10 *GLOB. GOVERNANCE* 395–402 (2004) [hereinafter Fukuda-Parr, *Millennium Development Goals*].

² Fukuda-Parr, *Millennium Development Goals*, *supra* note 1, at 395–99.

technological development captures the spheres we live in, intellectual property (IP) assets have become essential for progress and sustainability and may contribute to achieving other SDGs.³ Although the SDGs mention innovation, they focus on tangible rather than intangible needs and IP goals.⁴ The SDGs also missed the major role played by international professional organizations, such as the World Intellectual Property Organization (WIPO), one of the main international players in this arena. Nonetheless, SDGs reveal the interrelation between the different goals and, hence, raise the need to rethink and redefine the concept of IP – that is, beyond the current IP laws and their traditional viewpoint to include new global values and goals, including equality, accessibility, and fairness between developing and developed countries. To reach a new understanding of the IP regime, it is crucial to develop and adopt necessary support mechanisms for IP as well as new theoretical justifications.⁵

For example, when artificial intelligence (AI) systems create works of art or when blockchain-based nonfungible tokens (NFTs) provide global peer-to-peer distribution of IP assets, we have to ask ourselves: Should we rethink how we look at IP assets in general? Are they accessible? Can all creators and inventors in developing countries access these developments, and are they in a competitive position within the IP arena to access their outcomes?⁶

³ See DANIEL BENOLIEL, PATENT INTENSITY AND ECONOMY GROWTH (2017). See generally INTELLECTUAL PROPERTY AT THE EDGE: THE CONTESTED CONTOURS OF IP (Rochelle Cooper Dreyfuss & Jane C. Ginsburg eds., 2014) [hereinafter INTELLECTUAL PROPERTY AT THE EDGE] (describing the edge of intellectual property laws in the digital era); Carol M. Rose, *A Real Property Lawyer Cautiously Inspects the Edges of Intellectual Property*, in INTELLECTUAL PROPERTY AT THE EDGE, *supra*; MEGAN BOLER, DIGITAL MEDIA AND DEMOCRACY 303 (2010) (describing the implications of the massive amount of users that free services attract); JONATHAN TAPLIN, MOVE FAST AND BREAK THINGS: HOW FACEBOOK, GOOGLE, AND AMAZON CORNERED CULTURE AND UNDERMINED DEMOCRACY (2017) (“Google, Amazon and Facebook are all monopolies.”); *The Case for Reforming the Rules of Copyright*, FIN. TIMES (July 6, 2018), www.ft.com/content/20a8d1e0-810a-11e8-bc55-50daf1b720d.

Silicon valley companies – now the largest, richest corporate entities in the world . . . which amount in effect to billions of dollars in subsidies. That is a key reason why the European Parliament . . . voted to reject a draft reform of EU copyright laws that would have forced internet groups, such as Facebook and Google, the owner of YouTube, to use content filters to avoid breaching copyright, or to pay publishers for the right to use their content.

⁴ Fukuda-Parr, *Millennium Development Goals*, *supra* note 1, at 399 (stating that some academics, social activists, and government officials have focused on many objectives such as employment, reproductive health, human rights, and many other issues).

⁵ *Id.*

⁶ Kishore Vasan, Milan Janosov & Albert-Laszlo Barabási, *Quantifying NFT-Driven Networks in Crypto Art*, 12 SCI. REP. 2769 (2022) (“NFTs offer a mechanism for artists to create digital works of art and validate their work as unique, eternal, and worth collecting, and offers collectors the ability to showcase their collections on digital platforms. Driven by this technological innovation, digital art experienced \$2.5 Billion in sales just within the first two quarters of 2021.”); Katya Fisher, *Once upon a Time in NFT: Blockchain, Copyright, and the Right of First Sale*

In the face of the current “digital 3A” era of automated, autonomous, and advanced technologies,⁷ this chapter issues a call to rethink IP norms to ensure that all players and stakeholders – from creators and inventors to end-users worldwide – can access and make the most of existing IP. Broader opportunities should be extended to industries being disrupted by advanced technologies.⁸ Without access to IP, inequality may occur, creating destructive effects on social stability, the economy, and democracy. It is therefore worthwhile to ask who is excluded from access to IP through both the vertical and horizontal perspectives.⁹

As “rapid technological developments continue to transform the way works and other IP subject matter are created, produced, distributed and exploited,”¹⁰ this chapter calls for a new and broader understanding of the scope of IP rights, particularly in light of the SDGs that enhance more equality and equal access within an international perspective. IP shall be redefined to address legal and practical uncertainties for both rights holders and users of works.

Furthermore, living in the digital era, we cannot refer to IP regimes without considering an international perspective. Seeing the current global society through this lens illuminates the need to shift from traditional theoretical perspectives –

Doctrine, 37 CARDOZO ARTS & ENT. L.J. 629 (2019); Shlomit Yanisky-Ravid, *Generating Rembrandt: Artificial Intelligence, Copyright, and Accountability in the 3A Era – The Human-Like Workers Are Already Here – A New Model*, 2017 MICH. ST. L. REV. 659, 707–17 (discussing the question of ownership when AI systems generate artworks); Shlomit Yanisky-Ravid & Edward Kim, *Patenting Blockchain: Mitigating the Patent Infringement War*, 83 ALB. L. REV. 603 (2019) (discussing ownership on blockchain); Shlomit Yanisky-Ravid & Grace Monroy, *The Promised Land: Blockchain and the Fashion Industry*, 87 BROOK. L. REV. 609 (2022) (arguing that blockchain technology can cure the lack of IP protection in regard to fashion design).

⁷ Dr. Shlomit Yanisky-Ravid & Xiaoqiong (Jackie) Liu, *When Artificial Intelligence Systems Produce Inventions: An Alternative Model for Patent Law at the 3A Era*, 39 CARDOZO L. REV. 2215 (2018) (coining the term “3A era” to describe advanced, automated, and autonomous AI systems and arguing that patents laws are outdated, irrelevant, and inapplicable in situations where AI systems produce inventions, and that new tools, external to the legal regime, should therefore replace patent laws).

⁸ JACQUES BUGHIN, ERIC HAZAN, SREE RAMASWAMY, MICHAEL CHUI, TERA ALLAS, PETER DAHLSTROM, NICOLAUS HENKE & MONICA TRENCH, *ARTIFICIAL INTELLIGENCE: THE NEXT DIGITAL FRONTIER?* 5, 15, 19, 71 (2017) (demonstrating that one major example of a first taker is the entertainment industry, which heavily relies on advanced technologies); *IFPI Global Music Report 2018*, IFPI (Apr. 24, 2018), www.ifpi.org/ifpi-global-music-report-2018/ (stating that “[s]treaming revenues grow 41.1% to become largest revenue source, driven by 176 million users of paid subscription accounts,” “[t]hird consecutive year of growth following 15 years of revenue decline,” and “[c]ampaign to achieve full and fair value for music in digital marketplace continues”); *IFPI Global Music Report 2019*, IFPI (Apr. 2, 2019), www.ifpi.org/ifpi-global-music-report-2019/ (stating that “[t]otal streaming revenues grew 34.0% to nearly half of all revenue, driven by paid streaming”).

⁹ Sakiko Fukuda-Parr, *Keeping Out Extreme Inequality from the SDG Agenda – The Politics of Indicators*, 10 GLOB. POL’Y 61 (2019) [hereinafter Fukuda-Parr, *Keeping Out Extreme Inequality*] (discussing vertical versus horizontal inequality).

¹⁰ Council Directive 2019/790, art. 3 (entering into force June 7, 2019) (targeting “a well-functioning marketplace for copyright”).

namely, law and economics, personality, and Lockean labor theory – to a more open and equal global approach, such as the distributive justice approach that will be discussed in this chapter. The latter approach is crucial when focusing globally. International procedures should occur through an independent, objective entity recognized and trusted by the nations. This chapter suggests that international professional organizations, such as WIPO in the IP field, are the best players to administer these challenges.

The challenges that IP regimes face when the discourse on IP is altered beyond its traditional boundaries are the focus of this chapter.

14.1 TRADITIONAL JUSTIFICATIONS OF INTELLECTUAL PROPERTY LAWS

Intellectual property laws were created to achieve ideals that policymakers believed were important for society.¹¹ However, since the IP arena is constantly evolving and facing new challenges, such as the Internet and digital developments (e.g., AI systems, blockchain, and NFTs), policymakers must consider how IP regimes might adequately address these ideals and any other new goals.

Traditionally, the discourse concerning the theoretical justifications of IP has been focused on three main substantive theories: law and economics, personality theory, and Lockean labor theory.

The law-and-economics theory aims to maximize the total socio-economic welfare of the public.¹² It examines IP products and processes according to their efficiency and their contribution to promoting science and useful arts.¹³ The law-and-economics approach to IP focuses on the incentives of players and stakeholders within the industry to develop and distribute IP goods. By granting exclusive rights that exclude others from using the legally protected goods, the invention is

¹¹ Elizabeth L. Rosenblatt, *Intellectual Property's Negative Space: Beyond the Utilitarian*, 40 FLA. ST. U. L. REV. 441, 446 (2013) (“[B]y pinpointing the theoretical justification we can understand to what extent the laws achieve or fail to achieve these aims and how the laws should evolve to reflect those goals.”); see William Fisher, *Theories of Intellectual Property*, in NEW ESSAYS IN THE LEGAL AND POLITICAL THEORY OF PROPERTY 168, 194–99 (Stephen R. Munzer ed., 2001) (discussing the importance of theoretical discussion).

¹² DONALD S. CHISUM & MICHAEL A. JACOBS, UNDERSTANDING INTELLECTUAL PROPERTY LAW § 1C (1992); Margot E. Kaminski & Shlomit Yanisky-Ravid, *The Marrakesh Treaty for Visually Impaired Persons: Why a Treaty Was Preferable to Soft Law*, 75 U. PITT. L. REV. 255, 259, 265 (2014); see U.S. CONST. art. I, § 8, cl. 8; Fisher, *supra* note 11, at 169–70 (discussing incentive theory); Amy Kapczynski, *The Cost of Price: Why and How to Get beyond Intellectual Property Internalism*, 59 UCLA L. REV. 970, 970, 977–79 (2012) (“Giving full scope to distributive justice and other values thus requires us to telescope out from the internalism that characterizes the field, and to countenance a broader role for commons-based production and government procurement.”).

¹³ U.S. CONST. art. I, § 8, cl. 8; 17 U.S.C. § 107.

economically incentivized.¹⁴ Preventing free riders and ensuring an economic return for the most efficient stakeholders are just a few goals this approach targets. Once the exclusivity period expires, the goods become part of the public domain.¹⁵

Although the law-and-economics approach to IP is dominant, especially in the United States, some scholars have found its prevailing influence troublesome.¹⁶ Further, there has been much criticism regarding developing countries.¹⁷

Personality theory and Lockean labor theory focus on creators and inventors as humans. Based on the philosophy of Hegel, the personality justification focuses on representing the creators' personalities in their works.¹⁸ An individual's right to control his property relates to his personhood; property developed by an individual is seen as an extension of his personality, justifying his ownership.¹⁹ An IP regime premised on this view would protect personal assets more vigorously than fungible assets and would incorporate strict restrictions on transfer.²⁰

Under Lockean labor theory, one's interest in her property is justified because the property is the fruit of her labor.²¹ Intellectual property ownership of her creations is based on the same entitlements as one's rights over her own body and soul. In other words, the outcomes of people's efforts must become their possessions.²²

¹⁴ CHISUM & JACOBS, *supra* note 12, § 1C.

¹⁵ Yochai Benkler, *Free as the Air to Common Use: First Amendment Constraints on Enclosure of the Public Domain*, 74 N.Y.U. L. REV. 354, 360–62 (1999).

¹⁶ Andreas Rahmatian, *A Fundamental Critique of the Law-and-Economics Analysis of Intellectual Property Rights*, 17 MARQ. INTELL. PROP. L. REV. 191, 192–97 (2013).

¹⁷ See also Hannibal Travis, *Injury, Inequality, and Remedies: Developments in Injunctive Relief and Damages in Intellectual Property Cases*, 21 J. HIGH TECH. L. 34 (2021) (discussing copyright and patent systems as framed to exclude others to be followed by trademarks and trade secrets, which borrowed its remedial structure from federal statutes, focusing on remedies, such as injunctions and royalties, and inequality); Peter Yu's Chapter 3 in this volume ("[I]n developing countries, the Global South lamented the unfair distribution of benefits within the international intellectual property regime.").

¹⁸ See also G.W.F. HEGEL, *PHILOSOPHY OF RIGHT* 40–45 (T.M. Knox trans., Oxford University Press 1952) (1821); Fisher, *supra* note 11, at 171 (summarizing the main points of the connection between personality theory and intellectual property); Justin Hughes, *The Philosophy of Intellectual Property*, 77 GEO. L.J. 287, 331 (1988) (discussing the personality approach).

¹⁹ Fisher, *supra* note 11, at 169; Hughes, *supra* note 18, at 330.

²⁰ Margaret Jane Radin, *Property and Personhood*, 34 STAN. L. REV. 957, 986 (1982) (claiming the more expensive *personal* property is, the more nonfungible and nontransferable it becomes); see also Fisher, *supra* note 11, at 169; Hughes, *supra* note 18, at 336–37.

²¹ See Fisher, *supra* note 11, at 169–75 (describing various theories underlying intellectual property); Hughes, *supra* note 18, at 288–89 (same).

²² JOHN LOCKE, *TWO TREATIES OF GOVERNMENT* 287–88 (Peter Laslett ed., Cambridge University Press 1988) (1690) (describing Lockean labor theory as based in part on Locke's argument that an acquirer of property must leave sufficient materials or "building blocks" for others); see also SHLOMIT YANISKY-RAVID, *INTELLECTUAL PROPERTY IN THE WORKPLACE: THEORETICAL AND COMPARATIVE PERSPECTIVES* (2013); Fisher, *supra* note 11, at 170 (discussing labor theory); ROBERT P. MERGES, *JUSTIFYING INTELLECTUAL PROPERTY* 32–33 (2011) (discussing the Lockean labor approach as the preferred approach to understanding intellectual property); Hughes, *supra* note 18, at 297–99 (seeing instrumentalist and normative bases in the Lockean labor approach); Frank I. Michelman, *Property, Utility, and Fairness: Comments*

In sum, the traditional approaches to IP define, interpret, create, and recreate IP laws according to these three theoretical justifications. However, this chapter argues that, when addressing the digital 3A era, personality and labor theories are less applicable than law and economics. When sophisticated systems, such as AI, are involved in the creative process, and when the involvement of users in creating and disseminating IP assets is significant, concepts such as “incentive,” “personality,” and “labor” may lose their meaning. Furthermore, law and economics addresses a broader range of players and stakeholders in the IP industry, including investors and users. At the same time, the personality and labor theories focus solely on flesh-and-blood creators. By looking at economic justifications beyond IP, we can discover different international institutional approaches to scientific and cultural production that are no less efficient. These prevailing approaches conflict with the values of distributive justice, discussed in more detail in the next section, because reliance upon one feature (incentive, labor, or personality) may yield the unjust distribution of existing information and other resources and the unjust production of future information and resources.²³ These theories fail to explain the collective feature of IP assets.

The traditional justifications for IP almost entirely mishandle IP in the digital 3A era and the supportive and necessary tools that have become crucial to fulfilling the goals of the IP regime. The following section will present and address the approach that this chapter suggests as more germane to our era: the distributive justice approach.

14.2 DISTRIBUTIVE JUSTICE

14.2.1 *The Principles of Distributive Justice*

The principles of distributive justice are not necessarily consistent with economic-utilitarian considerations,²⁴ personhood considerations, or possession of assets (as the

on the Ethical Foundations of “Just Compensation” Law, 80 HARV. L. REV. 1165, 1203–04 (1967) (arguing that labor theory is an ethical foundation of property ownership).

²³ Kapeczynski, *supra* note 12, at 972–80 (2012) (giving full scope to distributive justice and other values thus requires us to go beyond the internalism that characterizes the field and to countenance a broader role for commons-based production and government procurement).

²⁴ See also RICHARD POSNER, *ECONOMIC ANALYSIS OF LAW* 32–39, 40 (6th ed. 2003) (explaining that the law-and-economics approach establishes rules of distribution by type according to the principles of justice aimed at maximizing welfare); Duncan Kennedy, *Distributive and Paternalist Motives in Contract and Tort Law, with Special References to Compulsory Terms and Unequal Bargaining Power*, 41 MD. L. REV. 563, 571–73 (1982) (discussing reasons for preferring the theory of efficiency over distributive justice and noting that the two theories bring contradictory results: The efficiency approach aims to improve both groups whereas the distributive approach prefers one group (the weak) over another in distributing resources).

fruits of someone's work).²⁵ Instead, distributive justice is concerned with the allocation and reallocation of social resources, including capital and other goods and tools as well as power and rights, in their broadest sense.²⁶ Although discussed by some scholars, distributive justice is considered neither a substance nor a major justification of IP; it is seen as an exception or postscript to the mainstream theoretical justifications.²⁷

This chapter contends that the theory of distributive justice is an integral and essential part of understanding the IP regime and the need for international IP supportive tools.²⁸

"Distributive justice" is a general title coined by Homans in 1961.²⁹ The term is broad and varies according to the different moral perspectives of what is the desired "fairness."³⁰ The theory determines the appropriate principles of resource allocation by which distribution will be made.³¹

Karen Cook and Karen Hegtvædt offered one of the best overarching descriptions: "All social systems evolve mechanisms for distributing valued resources and for allocating rights, responsibilities, costs, and burdens. Theories of distributive justice specify the conditions under which particular distributions (and, more recently, distributional procedures) are perceived to be 'just' or 'fair'."³²

²⁵ Stewart E. Sterk, *Rhetoric and Reality in Copyright Law*, 94 MICH. L. REV. 1197, 1234–39 (1996) (stating that copyright laws contradict theories about distribution of justice).

²⁶ G.A. Cohen, *Where the Action Is: On the Site of Distributive Justice*, 26 PHIL. & PUB. AFFS. 3, 3 (1997) (referring to distributive justice "as just distribution of benefits and burden on society").

²⁷ On distributive justice and intellectual property, see ERIC RAKOWSKI, *EQUAL JUSTICE* 86–87 (1991) (discussing rules for distributing benefits); J.W. Harris, *Who Owns My Body*, 16 OXFORD J. LEGAL STUD. 55, 66 (1996); William M. Landes, *Copyright Protection of Letters, Diaries and Other Unpublished Works: An Economic Approach*, 21 J. LEGAL STUD. 79 (1992) (implementing Rawls's theory on the veil of ignorance and the entitlement of authors to rights in unpublished works).

²⁸ MERGES, *supra* note 22, at 151–53 (stating that efficiency "is not capable of serving as a stand-alone foundation" for explaining intellectual property laws).

²⁹ See also GEORGE C. HOMANS, *SOCIAL BEHAVIOR: ITS ELEMENTARY FORMS* (1961); TORSTEIN ECKHOFF, *JUSTICE: ITS DETERMINANTS IN SOCIAL INTERACTION* (1974); Karen S. Cook & Karen A. Hegtvædt, *Distributive Justice, Equity, and Equality*, 9 ANN. REV. SOCIO. 217, 218 (1983) ("[T]he terms denote distinct types of justice. In concluding this section, we use Eckhoff's . . . five principles of equality to indicate how most existing conceptions of justice fit within a more general theoretical framework."); JERALD GREENBERG & RONALD L. COHEN, *EQUALITY AND JUSTICE IN SOCIAL BEHAVIOR* (1982); MELVIN J. LERNER & SALLY C. LERNER, *THE JUSTICE MOTIVE IN SOCIAL BEHAVIOR ADOPTING TO TIMES OF SCARCITY AND CHANGE* (1981).

³⁰ See also Fisher, *supra* note 11, at 175 (describing a "Social Planning Theory" of intellectual property based on political philosophy theorists, including Jefferson, Marx, and the legal realists); Rosenblatt, *supra* note 11, at 458 (citing Fisher *supra* note 11, at 192) (discussing those values in relation to the incentive to create).

³¹ Robert P. Merges, *Foundations and Principles Redux: A Reply to Professor Blankfein-Tabachnick*, 101 CAL. L. REV. 1361, 1379–81 (2013); see also MERGES, *supra* note 22, at 102 (describing distributive justice in the context of intellectual property as built mainly on the insights of Locke, Kant, and Rawls).

³² Cook & Hegtvædt, *supra* note 29, at 218.

Allocation occurs when an allocator distributes valued rewards, resources, rights, or obligations to an array of recipients.³³ In his books, Gerald Allen Cohen argues that equality, freedom, and accessibility are major features of the distributive justice approach.³⁴

Using norms of justice to regulate exchange and allocation processes has important social structural consequences.³⁵ This analysis of distributive justice provides a general framework in relation to commercial transactions, the emergence of markets, and the evolution of agreements regulating exchange and allocation activity in various social systems, among participants of varying degree of interdependence.³⁶ Whereas libertarians' concerns focus on the government misusing its power, distributive justice advocates are more concerned about the concentration of resources and power in the hands of a small number of groups or individuals.³⁷

One of the most desirable concepts underlying the establishment of distributive justice rules is the principle of equality.³⁸ Products and services, including IP assets in the current digital era, would be distributed in ways that provide individuals a share based on merit. Distribution may be based on rights, power, goods, capital, benefits, needs, efforts, and achievements. From a legal standpoint, a decision regarding which of these criteria is most important has not been made.³⁹ Under a

³³ *Id.* at 219 ("Whether the recipients are involved in a direct exchange relation with the distributor or indirectly with each other is a secondary analytical distinction. Furthermore, in many situations exchange and allocation processes combine.").

³⁴ See also GERALD ALLEN COHEN, *RESCUING JUSTICE AND EQUALITY* (2008); GERALD ALLEN COHEN, *DISTRIBUTIVE JUSTICE AND ACCESS TO ADVANTAGE* (2015); GERALD ALLEN COHEN, *ON THE CURRENCY OF EGALITARIAN JUSTICE AND OTHER ESSAYS ON POLITICAL PHILOSOPHY* (2011).

³⁵ Cook & Hegtvædt, *supra* note 29, at 234.

³⁶ *Id.* at 234–35.

³⁷ See also CHARLES E. LINDBLOM, *POLITICS AND MARKETS* 170–88 (1977); ROBERT NOZICK, *ANARCHY, STATE, AND UTOPIA* 150–53, 160, 175–82 (1974); C. Edwin Baker, *Property and Its Relation to Constitutionally Protected Liberty*, 134 U. PA. L. REV. 741, 748–51, 753 (1986); Daphna Lewinsohn-Zamir, *In Defense of Redistribution through Private Law*, 91 MINN. L. REV. 326, 335–36 (2006); Frank Michelman, *Tutelar Jurisprudence and Constitutional Property*, in *LIBERTY, PROPERTY, AND THE FUTURE OF CONSTITUTIONAL DEVELOPMENT* 127, 139, 149–57 (Ellen Frankel Paul & Howard Dickman eds., 1990); Carol M. Rose, *Property as the Keystone Right?*, 71 NOTRE DAME L. REV. 329, 342–44 (1996).

³⁸ See THOMAS NAGEL, *EQUALITY AND PARTIALITY* 12, 68–69 (1991); JOSEPH RAZ, *THE MORALITY OF FREEDOM* 193, 198, 206 (1989); Frank I. Michelman, *Possession vs. Distribution in the Constitutional Idea of Property*, 72 IOWA L. REV. 1319, 1319–20, 1329 (1987); see also ARISTOTLE, *THE NICHOMACHEAN ETHICS OF ARISTOTLE* 145 (F.H. Peters trans., 15th ed., Kegan Paul, Trench, Trübner & Co. 1893) ("For in distribution all men allow that what is just must be according to merit or worth of some kind, but they do not all adopt the same standard of worth.").

³⁹ See, for example, *W. Air Lines, Inc. v. Criswell*, 472 U.S. 400, 404, 413–15 (1985); *Geduldig v. Aiello*, 417 U.S. 484, 495–96 (1974). *EEOC v. Mo. State Highway Patrol*, 748 F.2d 447, 455 (8th Cir. 1984); Wendy W. Williams, *The Equality Crisis: Some Reflections on Culture, Courts, and Feminism*, 7 WOMEN'S RTS. L. REP. 175, 175 (1982).

distributive justice approach, all would be considered, and an asset would be shared if “fair” under all these factors.

Distributive justice principles are strongly affiliated with John Rawls’s theory of justice.⁴⁰ These principles can be applied to IP tools, primarily and most effectively within an international environment. Under Rawls’s theory of justice, distribution rules serve as the basis for allocating rights to promote social justice.⁴¹ Rawls sought to establish the principles of justice used by policymakers. When setting rules, especially about property and possession, policymakers should ensure equality and fairness for all, rather than favoring and promoting their interests or the interests of the stronger party.⁴²

Rawls proposed an imaginary assembly of people acting under a “veil of ignorance” to ensure that decision-makers have no actual knowledge regarding their interests, guaranteeing equality, freedom, and fairness in their decisions.⁴³ Rawls suggested two principles of justice: The first principle is that all people have an equal right to a broad range of basic freedoms; the second principle espouses equal opportunity for all. These principles support the weaker parties and result in a more egalitarian and fair distribution of goods (including IP assets in the broadest sense).⁴⁴

IP regimes are traditionally applied firstly within a single territorial state. This national approach seems to limit the sharing of advanced technologies arbitrarily. This hurdle is particularly stark in the distributive justice of IP assets. Local governments tend to prefer local IP industries. This traditional perception of IP needs to change, particularly in the digital era. Building on the author’s other work, this chapter calls for abandoning the focus on national IP and adopting an international vision of distributive justice.⁴⁵ As one commentator observed:

Global development goals are important because they create consensus norms. They define priority objectives and ethical standards that are considered legitimate and influence the behavior of diverse stakeholders. Though global goals are international agreements without enforcement mechanisms, they exert influence in

⁴⁰ Shlomit Yanisky-Ravid, *The Hidden Thought Flourishing Justification of Intellectual Property Laws: Distributive Justice; National versus International Approach*, 21 LEWIS & CLARK L. REV. 1, 7–8, 14–17 (2017) (arguing for the distributive justice approach as an internal basis for national and international intellectual property regimes). For a more general concept, see Michael Blake, *Distributive Justice, State Coercion, and Autonomy*, 30 PHIL. & PUBL. AFFS. 257, 257–96 (2001) (endorsing the idea that we can defend principles of sufficiency abroad and principles of distributive equality at home, because these principles can be understood as distinct implications of impartial principles in distinct institutional contexts).

⁴¹ JOHN RAWLS, A THEORY OF JUSTICE 6–7 (rev. ed. 1999); MERGES, *supra* note 22, at 102–03 (discussing Rawls’s theory as one which resembles distributive justice in regard to intellectual property); see also JOHN RAWLS, JUSTICE AS FAIRNESS – A RESTATEMENT 7, 25 (Erin Kelly ed., 2001).

⁴² Yanisky-Ravid, *supra* note 40, at 14–17.

⁴³ RAWLS, *supra* note 41; Yanisky-Ravid, *supra* note 40, at 14–17.

⁴⁴ RAWLS, *supra* note 41; Yanisky-Ravid, *supra* note 40, at 14–17.

⁴⁵ Yanisky-Ravid, *supra* note 40.

large part by creating narratives and framing debates about how development challenges should be conceptualized. At face value, the 2030 Agenda would appear to contain a strong norm for reducing inequality.⁴⁶

14.2.2 *Intellectual Property Regime through a Distributive Justice Lens*

This chapter contends that the distributive justice approach is relevant to the IP regime. Although scholars differ from one another in their approaches to this question, this chapter argues that distributive justice is crucial to understanding IP laws, especially in the digital era, when it is difficult to imagine the process of creation and invention without significantly relying on input from many sources, including technological systems.⁴⁷

Scholars tend to fall under two prevailing theories, the “externalist” and the “internalist” perspectives, as was described in other works of the author. Some “externalist” scholars see law and economics as the sole or the main approach to IP,⁴⁸ with the IP regime being detached from any distributive justice goals.⁴⁹ Under this perspective, IP focuses on entities that develop and distribute their assets and ignore values such as inequality and accessibility.⁵⁰ The second approach, dubbed by the author as the “internalist approach,” sees distributive justice as a source only of potential exceptions and limitations to IP, incorporated through concepts such as “fair use.”⁵¹

In contrast to the approaches described earlier, this chapter proposes a third concept that ties distributive justice to a broader assessment of IP laws recognizing the digital era. This approach claims that IP laws reflected distributive justice principles from the beginning, as both were “born” together and can “get along” in harmony and synergy.⁵² The now-prevalent understanding of IP, which

⁴⁶ Fukuda-Parr, *Keeping Out Extreme Inequality*, *supra* note 9.

⁴⁷ Yanisky-Ravid, *supra* note 40, at 17–19.

⁴⁸ *Id.*

⁴⁹ Kapczynski, *supra* note 12, at 973–74, 978–79. Areas such as science, Internet entertainment, Wikipedia, and free software are generated by a “common based approach” or with governmental funding to develop public domain products, both of which are totally different from the exclusive approach of intellectual property. Intellectual property is not just a problematic way to distribute scientific and cultural goods but is also a problematic way to produce them. A system based on price will probably prioritize the wealthy and leave out the poor. *Id.*; see also Rosenblatt, *supra* note 11, at 447–52 (discussing “negative spaces,” which are areas that are not controlled by intellectual property rules). Both Kapczynski and Rosenblatt challenge the conclusion usually taken for granted that intellectual property protection is necessary to encourage authors and inventors to invest in the creative process.

⁵⁰ Yanisky-Ravid, *supra* note 40, at 17–19.

⁵¹ Molly Shaffer Van Houweling, *Distributive Values in Copyright*, 83 TEX. L. REV. 1535, 1537–39, 1567 (2005) (stating that poor artists who do not profit from their works should more easily benefit from the fair use doctrine); Kapczynski, *supra* note 12, at 975.

⁵² Yanisky-Ravid, *supra* note 40, at 17–19.

essentially adopts the law-and-economics interpretation of IP laws, emerged only later, influenced by certain groups with specific interests.⁵³

In his article, Lior Zemer supports this third approach, which can be coined the collective approach.⁵⁴ He claims that generations of scholars have struggled to redefine copyright to afford users public comprehensive access rights and privileges. Zemer suggests a new theoretical justification for copyright features in translating inter-human relations into the language of creative properties and defining copyright as a dialogue between authors and others, especially in the digital environment.⁵⁵ This approach interprets IP assets as being created through the contribution of many personas, entities, and institutions, as well as the general public, rather than focusing on the author as the sole creator. Consequently, authorship may be distributed among all contributors.

This chapter expands this argument and states that the IP arena has experienced major changes in light of the digital revolution and that the traditional theories that explained the regime in the past should be reconsidered to justify collective intellectual assets – currently and, most probably, also in the near future. Adopting a new approach to IP is crucial, especially in the digital era; otherwise, we may end up limiting the scope of the IP regime by expanding its exceptions and limitations or even invalidating IP laws when technological tools, such as AI systems, dominate the creative process. In other words, as more and more IP assets are being created by using digital tools, and as the volume of creative art that can be generated with one click becomes almost unlimited, the value of IP laws may first be challenged. Then, when digital tools capture the market, IP laws may become incapable of coping with the digital creation of IP assets and of being enforced – and, therefore, invalid.

This concern has already come true in the wake of *Naruto v. Slater* (the monkey selfie case),⁵⁶ when the U.S. Copyright Office declared that the copyright regime does not include nonhuman creations.⁵⁷

IP laws have changed over the years.⁵⁸ Thus, embracing distributive justice as a dominant approach to the IP regime may be integral to its natural evolution. This chapter states that the international arena may play a major role in pursuing the distributive justice approach to IP. The next section discusses the important role of

⁵³ *Id.*

⁵⁴ Lior Zemer, *Dialogical Transactions*, 95 OR. L. REV. 141 (2016).

⁵⁵ *Id.* at 214 (“Information networks, as opposed to traditional creative industries, offer an unprecedented wealth of information and opportunities to dialogically transact with others.”).

⁵⁶ 888 F.3d 418 (9th Cir. 2018).

⁵⁷ The United States Copyright Office, citing *Burrow-Giles Lithographic Co. v. Sarony*, 111 U.S. 53 (1884), stated: “To qualify as a work of ‘authorship’ a work must be created by a human being Works that do not satisfy this requirement are not copyrightable.” U.S. COPYRIGHT OFF., COMPENDIUM OF COPYRIGHT OFFICE PRACTICES § 313.2 (3rd ed. 2017). The Copyright Office also states that it “will not register works produced by a machine or mere mechanical process that operates randomly or automatically without any creative input or intervention from a human author.” *Id.* § 313.2.

⁵⁸ Kapczynski, *supra* note 12.

international organizations, while also focusing on WIPO and its tools to exemplify this approach.

14.3 DISTRIBUTIVE JUSTICE IN INTERNATIONAL TOOLS FOR ALL

14.3.1 *The Benefits of International Distribute Justice: Harmony, Certainty, and Trust*

The modern digital era has elevated tension between collective and individualistic interests, as well as between national and international interests. Companies will inevitably make choices in favor of their interests, maximizing income and avoiding the sharing of information regarding their business to maintain their advantage over competitors. This incentive for companies to focus on their individualistic interests is driven by financial rewards, which have further bolstered IP laws. In contrast, the global society may profit from strategies incorporating worldwide collective efforts, distributing information and assets, including IP, to achieve progress in the fastest and most efficient ways. An effective distribution system of shared data can be achieved by cross-country exchange systems that allow everyone who wants to share valuable information with others to do so. Collaboration benefits societies worldwide, and many companies can provide important information and intellectual resources in return for their participation.⁵⁹ To gain the trust (and participation) of dominant players, such systems should be universal, transparent, reliable, and impartial.

Companies can protect their assets and interests by using self-help tools. Some examples of self-help are calling out copycats and advocating openly against copying.⁶⁰ However, these self-help measures are limited in providing reasonable means of protection and their ability to follow the IP regime worldwide. They also serve a company's specific interest, rather than the public's.⁶¹

Distributive justice enhances two sets of value-distribution activities: (1) sharing and distributing knowledge, and (2) helping humanity promote human rights values or preserve cultural artifacts and historical data. Under this view, open access to books, art, music, and even medicine has become a fundamental right in our world. International tools can enhance accessibility and better distribution of tangible and intangible assets to millions of users around the globe, especially in developing countries.⁶²

⁵⁹ Devi Gnyawali & Byung-Jin Park, *Co-opetition between Giants*, 40 RSCH. POL'Y 650–63 (2011) (describing study demonstrating the challenge of coopetition and yet being very helpful for firms to address major technological challenges, to create benefits for partnering firms and to advance technological innovation; it also shows that coopetition between giants causes subsequent coopetition among other firms and results in advanced technological development).

⁶⁰ *Id.*

⁶¹ *Id.*

⁶² Margaret Chon, *Intellectual Property and the Development Divide*, 27 CARDOZO L. REV. 2821, 2907–08 (2006) (favoring exceptions and limitations in intellectual property treaties).

One of the goals international organizations target while adopting global distributive justice approaches is to achieve a better balance between developed and developing countries in the flow of capital, access to knowledge, economic growth, workforce quality, and many other important factors.⁶³ These goals can be achieved through international tools that grant exemptions and limitations in favor of developing countries according to their special needs. Important treaties have been designed to serve as a means to achieve these goals. Examples include the Agreement on Trade-Related Aspects of Intellectual Property Rights, the Marrakesh Treaty to Facilitate Access to Published Works for Persons who are Blind, Visually Impaired or Otherwise Print Disabled (regarding exceptions and limitations to traditional IP laws aimed at assisting visually impaired persons and supporting higher percentages of these individuals in developing countries), and the Kyoto Protocol to the United Nations Framework Convention on Climate Change (regarding the reduction of gas emissions). These all impose lower levels of obligations on developing countries. The Anti-Counterfeiting Trade Agreement and the Doha Declaration on the TRIPS Agreement and Public Health further take a flexible stance concerning balancing private IP rights and public interests to promote access to essential medicines for all.⁶⁴

The international view reveals a different reality. Interestingly and surprisingly, WIPO has changed its policy in recent years by adopting a new approach that considers distributive justice as part of its agenda. Contemporary international IP tools being developed by the organization adopt distributive justice as their main goal, even though their implementation at the international level may require further adjustments for developing countries.⁶⁵

Research analyzing patent provisions in bilateral, regional, and plurilateral agreements, compared to international tools, reveals that the latter are more efficient in attaining their IP goals.⁶⁶ This conclusion is especially true when we address WIPO's involvement. First, the involvement of an international entity such as

⁶³ Ali Imam, *How Patent Protection Helps Developing Countries*, 33 *AIPLA Q. J.* 377, 379 (2005). See generally Nora Maija Tocups, *The Development of Special Provisions in International Copyright Law for the Benefit of Developing Countries*, 29 *BULL. COPYRIGHT SOC'Y U.S.A.* 402 (1981).

⁶⁴ See also Rochelle Dreyfuss & Susy Frankel, *From Incentive to Commodity to Asset: How International Law Is Reconceptualizing Intellectual Property*, 36 *MICH. J. INT'L L.* 557, 557–60 (2015); Ilan Benshalom, *Rethinking International Distributive Justice: Fairness as Insurance*, 31 *B.U. INT'L L.J.* 267, 285–86 (2013); Kaminski & Yanisky-Ravid, *supra* note 12; Miriam Bitton, *Rethinking the Anti-Counterfeiting Trade Agreement's Criminal Copyright Enforcement Measures*, 102 *J. CRIM. L. & CRIMINOLOGY* 67 (2012); Margot E. Kaminski, *An Overview and the Evolution of the Anti-Counterfeiting Trade Agreement (ACTA)*, 21 *ALB. L.J. SCI. & TECH.* 385, 387–88 (2011).

⁶⁵ Ofer Tur Sinai, *The Trans-Pacific Partnership: Experimental Use of Patents on the International Agenda*, 16 *N.C. J.L. & TECH.* 16 (2014).

⁶⁶ *Id.* at 64 (criticizing the Trans-Pacific Partnership on experimental use of patents and concluding that international tools are more efficient).

WIPO, unlike local and even bilateral or regional treaties, may have a greater impact on the laws of member states. Second, WIPO can not only provide impactful tools but also create an objective and professional dispute resolution mechanism.⁶⁷ Finally, national legislation may be too narrow or may fail to address the important feature of IP tools as still evolving.

The next section maintains that distributive justice principles should not only govern an international IP regime but should also extend to affiliated tools that have become essential to executing IP laws globally. This chapter focuses on three such tools: (1) WIPO Proof, (2) WIPO Match, and (3) WIPO Re:Search.

14.4 WIPO'S INTERNATIONAL IP TOOLS

WIPO has recently launched several services exemplifying a distributive justice approach to IP, expanding its frontiers to new digital services and making them accessible to all. Provided by the leading international organization in the field, these services demonstrate a transition to a new understanding of the industry, incorporating distributive justice values and international perspectives as an integral part of IP. The next subsections are based on information provided by WIPO.

14.4.1 *New Business Service Providing Evidence of the Existence of an Intellectual Asset: WIPO Proof*

Intellectual property regimes consistently struggle to reduce the number of counterfeits at both the national and international levels. Despite the efforts and the capital invested in the war against counterfeits, it is indisputable that counterfeit rates have continuously grown.⁶⁸ “As exemplified by the statistics, counterfeiting in today’s globalized environment is a global problem that can only be combated on an international scale.”⁶⁹ Fighting counterfeits in the digital era has also been a

⁶⁷ WIPO Alternative Dispute Resolution (ADR), WORLD INTELL. PROP. ORG., www.wipo.int/amc/en/ (last visited July 21, 2022):

The WIPO Arbitration and Mediation Center offers time- and cost-efficient alternative dispute resolution . . . options, such as mediation, arbitration, expedited arbitration, and expert determination to enable private parties to settle their domestic or cross-border commercial disputes. The WIPO Center is international and specialized in IP and technology disputes. The WIPO Center is also the global leader in the provision of domain name dispute resolution services under the WIPO-designed [Uniform Domain Name Dispute Resolution Policy].

⁶⁸ WIPO Proof has been discontinued as of January 31, 2022, but the principles behind the service mirror the ideas in this chapter. *Discontinuation of the WIPO Proof Token Generation Service*, WORLD INTELL. PROP. ORG., www.wipo.int/wipoproof/en/news/2021/news_0003.html (Oct. 11, 2021); Bitton, *supra* note 64, at 68 (suggesting that the criminal enforcement systems in place have not significantly deterred or affected people’s behavior in this field).

⁶⁹ Bitton, *supra* note 64, at 113–15 (discussing different aspects of ACTA and concluding that the international treaty follows the U.S. model for criminal enforcement of copyright law).

significant legal challenge.⁷⁰ The current era is confronted with a growing array of data files containing valuable and often IP-protected information. This data can easily fall prey to misuse or misappropriation. Endangered digital files vary from musical scores, research results, large data sets, and business information to highly sophisticated software. Moreover, digital files are common in creative works and design, such as audio-visual works, textile designs, software, industrial design sketches, books, and scripts.⁷¹

A few solutions to address these challenges have been suggested and tested. Fingerprint digital stamps are available on the market. The use of blockchain technology and smart contracts, including NFTs, exemplifies digital tools that try to certify original authors and make IP regimes more accessible and open to all. Blockchain features such as distributed, shared, and encrypted databases that serve as irreversible and incorruptible public repositories of information⁷² can be especially attractive to IP industries that suffer in the digital era from a lack of protection, face hurdles in proof of originality and proof of copying, experience rampant counterfeiting, have to rely on third parties as distributors with high cuts of sales, and have trouble collecting fees.⁷³ Because blockchain is decentralized, it may be an attractive platform to smaller creators with fewer resources. By eliminating the third party, the platform promotes efficiency created in a peer-to-peer economy. Notwithstanding all of their benefits, these tools have been criticized on several grounds, including the economic interest of their distributors.⁷⁴

This section argues that for IP validation services to be trustworthy, they should rely on the existing agreed-upon and accepted concepts of global IP law. In addition, for the authentication process to be effective, it should be equally available and accessible to anyone worldwide.

⁷⁰ Kaminski, *supra* note 64, at 413–14 (criticizing ACTA efforts to fight counterfeits “as new products or programs that have not yet found a market will be prohibited under this language so long as it can be shown that they circumvent technological measures”).

⁷¹ WIPO Proof – Trusted Digital Evidence, WORLD INTELL. PROP. ORG., www.wipo.int/wipo-proof/en/index.html (last visited July 21, 2022) [hereinafter WIPO Proof]; WIPO Proof – Trusted Digital Evidence to Your Intellectual Assets, WORLD INTELL. PROP. ORG., <https://wipoproof.wipo.int/wdts/> (last visited July 21, 2022).

⁷² Yanisky-Ravid & Kim, *supra* note 6, at 607–10 (describing ten salient features of blockchain platforms).

⁷³ See also Alan Cohn, Travis West & Chelsea Parker, *Smart after All: Blockchain, Smart Contracts, Parametric Insurance, and Smart Energy Grids*, 1 GEO. L. TECH. REV. 273 (2017); Ioannis Karamitsos, Maria Papadaki & Nedaa Baker Al Barghuthi, *Design of the Blockchain Smart Contract: A Use Case for Real Estate*, 9 J. INFO SEC. 177 (2018); John Ream, Yang Chu & David Schatsky, *Upgrading Blockchains: Smart Contract Use Cases in Industry*, DELOITTE INSIGHTS (June 8, 2016), <https://www2.deloitte.com/us/en/insights/focus/signals-for-strategists/using-blockchain-for-smart-contracts.html>; John Zarocostas, *The Role of IP Rights in the Fashion Business: A US Perspective*, WIPO MAG. (Aug. 2018), www.wipo.int/wipo_magazine/en/2018/04/article_0006.html; Yanisky-Ravid & Monroy, *supra* note 6.

⁷⁴ Yanisky Ravid & Kim, *supra* note 6; Yanisky-Ravid & Monroy, *supra* note 6.

Consistent with distributive justice and the rising need for international tools, WIPO suggested a new online business service called WIPO Proof. This service provided proof of the existence of a digital file at any point in time.⁷⁵ WIPO Proof provided an easy-to-use global online service that rapidly generated tamper-proof evidence proving that a digital file existed at a specific time and had not been altered since. In other words, it produced a unique fingerprint of your digital file, dated and timestamped the second it is created.⁷⁶

Proof of originality includes the date of creation, which has become particularly difficult to validate in digital works. The goal of this tool was to create verifiable actions to guard the different digital outputs of creators and innovators in their work. It can also be useful to prove counterfeits and prevent future misuse. Social networks can also rely on a system like this to avoid liability when displaying online copyrightable content. The fact that WIPO Proof was an efficient tool for creating evidence of an asset's digital files at each point in time allowed it to solve and prevent potential future legal disputes. It laid a foundation for the registration of a formal IP right. The service was open to everyone and could have efficiently helped young or emerging creators and innovators.⁷⁷ WIPO Proof tokens were purchased for a small fee. After a token had been purchased, one individual received a copy with the other being stored securely on WIPO's servers.⁷⁸

Distributive justice principles are reflected in the open access of the tool. Anyone could access WIPO Proof's secure online website to request a token for a digital file.⁷⁹ It was available online to *every user in the world*.⁸⁰ WIPO used industry-

⁷⁵ WIPO Proof, *supra* note 71.

⁷⁶ *Id.*

⁷⁷ Shlomit Yanisky-Ravid & Sean Hallisey, "Equality and Privacy by Design": A New Model of Artificial Intelligence Data Transparency Certification as Safe Harbor, 46 FORDHAM URB. L.J. 428 (2019); *see also* WIPO Proof, *supra* note 71.

⁷⁸ WIPO Proof, *supra* note 71.

⁷⁹ *Id.* WIPO Proof provides innovators and creators worldwide with secure evidence that a creation existed at a given point in time and can be verified by anyone. For creative works, the ability to prove their existence at the time of creation is fundamental to safeguarding them from potential misappropriation or infringement. By creating a date and time-stamped fingerprint of a digital file, WIPO Proof provides a sort of digital notary service, offering a trusted, cost-effective, and efficient service worldwide. WIPO does not read the file's contents nor store a copy of it. Moreover, WIPO Proof's secure, one-way algorithm interacts locally with the requester's browser to create a unique digital fingerprint of the file. WIPO Proof tokens deliver the highest level of certainty that the date and time on the token is exact and has not been tampered with.

⁸⁰ Creating and innovating is often a long, iterative process that generates many valuable outputs along the way. Proving that an idea, lyric, sketch, or other original creation existed before someone else's can add substantially to its value. Furthermore, WIPO claims that the token system is reliable and is backed by WIPO's 130 years of experience providing secure, trustworthy IP services worldwide.

leading security technology to generate a globally recognized digital fingerprint of each habitant's intellectual asset.⁸¹

This service, along with other services discussed later, included complimentary tools to WIPO's existing IP systems that provided another way for the strategic global management of intellectual assets necessary to maintain IP laws.

14.4.2 *The New International Digital IP Match-Maker: WIPO Match*

A company's ability to develop IP assets depends on many variables. One critical variable is the company's ability to obtain and use financial and human resources. Many small businesses face difficulties getting investments; government assistance may be limited by local interests such as tax reduction, a desire to employ residents, locating a business in rural areas, and preventing a business from moving to other countries. Finding funding is a challenge that small and medium enterprises struggle with. It is even more challenging for businesses positioned for the international arena.

Surprisingly, despite the global nature of the current investment market, due to "home country bias," a significant percentage of people and companies still prefer to invest in familiar surroundings – in their home or regional markets or in familiar markets they believe they can trust.⁸² Businesses in developing countries face major hurdles in attracting huge investments. Possibly, and regretfully, a lack of stable legal systems, or even the difference in language and culture, may create mistrust among potential international investors. Further, local investors face fewer tax hurdles when buying domestic shares and lower foreign currency risks.⁸³ The governmental policy also tends to encourage local investment.⁸⁴ The average American with a stock portfolio invests 79 percent of it in U.S.-listed stocks. Similarly, investors in Australia have an average of two-thirds of their portfolio in local shares.⁸⁵

Establishing a reliable, unbiased system for international investment can help overcome these hurdles, encourage investments worldwide, and consequently stimulate global progress and equality.⁸⁶ Such an approach would enhance collaboration between investors and developers and help businesses in developing countries attract funding despite the hurdles described earlier, especially in the digital era.

⁸¹ WIPO Proof uses public key infrastructure (PKI) technology to generate the tokens. The technology is considered one of the most internationally accepted and recognized digital certification methods.

⁸² Kim Iskyan, *Investing Solely in Your Home Country Is Like Juggling Live Dynamite*, BUS. INSIDER (Aug. 9, 2016), www.businessinsider.com/investing-in-home-country-like-juggling-dynamite-2016-8.

⁸³ Investors often "trust" companies and stocks outside their borders less than they do in their own country.

⁸⁴ Iskyan, *supra* note 82.

⁸⁵ *Id.*

⁸⁶ Many open questions can be raised. What is the significance of the tendency toward local investment? Is it that specific global market incentives are needed? Must solutions counter these tendencies? How might a global IP protection regime specifically induce investment?

Using its international role to globally amplify principles of distributive justice and equality, WIPO has recently launched a new service supporting developing countries with IP developments. It aims to overcome the challenge that companies in developing countries face in attracting financial investments to enhance their economic growth. WIPO Match is a free online tool to match seekers of specific IP-related developmental needs with potential providers of resources.⁸⁷ WIPO acts as an international facilitator and publicizes successful matches. The service amplifies WIPO's resources and multiplies existing partnerships within the international IP arena. WIPO Match aims to harness the power of industry and the private sector to promote economic, social, and cultural development in developing countries and countries in transition. WIPO tries to empower the innovation and creativity of smaller IP stakeholders.⁸⁸ WIPO Match invites seekers and providers to engage in this project. Seekers must come from developing countries, countries in transition, or least developed countries.⁸⁹ While WIPO provides a clear definition of potential seekers, it does not limit potential providers.⁹⁰ WIPO's goal is to allow small businesses with limited resources to access IP-protected information, turning IP into a tool for collaboration, rather than an obstacle to growth.

14.4.3 *Global Collaboration with Bio Venture for Global Health: WIPO Re: Search Project*

The traditional IP regime, particularly in the United States and other developed countries, is based on granting exclusive rights – which allows, for instance, the pharmaceutical industry to dictate its licensing terms and conditions. This leads to high prices for patented drugs. These costs result in many people, particularly in developing countries, unable to afford these drugs. As a practical matter, this represents an oft-insurmountable hurdle, depriving millions of people from full access to necessary medications and better health.⁹¹ WIPO identified this hurdle and launched WIPO Re:Search. This project aims to improve the collaboration

⁸⁷ *WIPO Match: Leveraging Intellectual Property for Development*, WORLD INTEL. PROP. ORG., www.wipo.int/wipo-match/en/ (last visited July 21, 2022).

⁸⁸ *Id.*

⁸⁹ *Id.* WIPO's definition of seekers includes nongovernmental organizations from developed countries working with projects in developing countries and/or countries in transition, IP offices, IP-related government bodies, public research institutions, universities, foundations, inter-governmental organizations, and companies.

⁹⁰ *Id.* The open-ended provider list includes governments, nongovernmental organizations, intergovernmental organizations, foundations, companies, and universities.

⁹¹ See, for example, Krista L. Cox, *The Medicines Patent Pool: Promoting Access and Innovation for Life-Saving Medicines through Voluntary Licenses*, 4 HASTINGS SCI. & TECH. L.J. 291, 293–94 (2012); Amir H. Khoury, *The “Public Health” of the Conventional International Patent Régime and the Ethics of “Ethicals”*: Access to Patented Medicines, 26 CARDOZO ARTS & ENT. L.J. 25, 32–33 (2008); Peter K. Yu, *Access to Medicines, BRICS Alliances, and Collective Action*, 34 AM. J.L. & MED. 345, 358 (2008); Dean Baker, *Current Drug-Patent System Is Bad*

between pharmaceutical firms and large corporations by harnessing the power of public and private partnerships to help make IP available to the scientists who need it. Re:Search specifically targets the fight against neglected tropical diseases such as malaria and tuberculosis.⁹²

Historically, WIPO has taken a stance in supporting traditional IP policy and encouraging developed countries to adopt an IP regime.⁹³ However, there has been an interesting shift in WIPO policy, reflected in a broader definition of the goals of IP systems and global distributive justice concepts, as previously discussed in this chapter. WIPO's Re:Search project emphasizes data sharing and access to health.⁹⁴ WIPO established this project to address the essential need for new and better drugs, diagnostics and vaccines.⁹⁵ Through WIPO Re:Search, organizations share without royalty IP, compounds, expertise, know-how, and facilities. The open environment promotes cooperation and collaboration among researchers from leading pharmaceutical firms.⁹⁶ It enables them to develop medical solutions for diseases that will affect developing countries.⁹⁷ The collaborative and open-access policy exemplifies several basic distributive justice values, such as enabling open access, promoting

Medicine, ALJAZEERA AM. (Nov. 24, 2014), <http://america.aljazeera.com/opinions/2014/11/drug-patents-pharmaceuticalindustrygenericsindia.html>.

⁹² WIPO Re:Search, WORLD INTELL. PROP. ORG., www.wipo.int/research/en/ (last visited July 21, 2022).

⁹³ See Sisule F. Musungu & Graham Dutfield, *Multilateral Agreements and a TRIPS-Plus World: The World Intellectual Property Organization (WIPO)* (Quaker United Nations Off., TRIPS Issues Paper No. 3, 2003).

⁹⁴ WIPO Re:Search, *supra* note 92. WIPO Re:Search was established in 2011 by WIPO in collaboration with BIO Ventures for Global Health and with the active participation of leading pharmaceutical companies and other private- and public-sector research organizations. *About WIPO Re:Search*, WORLD INTELL. PROP. ORG., www.wipo.int/research/en/about/ (last visited July 21, 2022); see also WORLD HEALTH ORG., WORLD INTELL. PROP. ORG. & WORLD TRADE ORG., *PROMOTING ACCESS TO MEDICAL TECHNOLOGIES AND INNOVATION: INTERSECTIONS BETWEEN PUBLIC HEALTH, INTELLECTUAL PROPERTY AND TRADE* (2d ed. 2020); Catherine Jewell, *Catalyzing Research into Neglected Tropical Diseases*, WIPO MAG. (Feb. 2013), at 15, www.wipo.int/wipo_magazine/en/2013/01/article_0004.html.

⁹⁵ Anatole Krattiger, *Promoting Access to Medical Innovation*, WIPO MAG. (Oct. 2013), at 5, www.wipo.int/wipo_magazine/en/2013/05/article_0002.html; see also *Neglected Tropical Diseases*, WORLD HEALTH ORG., www.who.int/neglected_diseases/diseases/en/ (last visited July 21, 2022) ("Neglected tropical diseases (NTDs) – a diverse group of communicable diseases that prevail in tropical and subtropical conditions in 149 countries – affect more than one billion people and cost developing economies billions of dollars every year.").

⁹⁶ *Id.* According to WIPO, NTDs such as "malaria and tuberculosis affect more than one billion people across the globe. Although recent years have seen the arrival of new [research-and-development] models and extra resources, there remains a pressing need to bridge research gaps and bring together knowledge, skills and infrastructure from the private, non-profit, and academic sectors." *Sharing Innovation in the Fight against Neglected Tropical Diseases*, WORLD INTELL. PROP. ORG. (Aug. 2014), www.wipo.int/export/sites/www/research/docs/flyer_wiporesearch_2014.pdf.

⁹⁷ WIPO Re:Search, *supra* note 92.

equality by supporting developing countries, and sharing data rather than prioritizing exclusive rights.⁹⁸

CONCLUSION

The example of WIPO Re:Search is one of many that reflect distributive justice principles; the tools benefit developing countries by providing certain favorable conditions, such as improving access to medicines to the benefit of the poor and needy, enhancing access to knowledge and technology for developing countries, and encouraging developed countries to share knowledge and technology. According to WIPO, more than a hundred countries have agreed to the model, and leading pharmaceutical firms, such as Novartis, and leading universities have joined the project.⁹⁹

The phenomenon of giving IP laws a new and different meaning by adopting the distributive justice approach, which enhances access to IP assets, stands in contrast to the traditional perspective on the IP regime. WIPO Re:Search provides the necessary incentive for research and development by providing exclusive rights for a limited time to owners that solely control their IP products and processes.

This chapter contends that, in the face of the digital era, this one-sided, narrow, local, and traditional perspective should and can be expanded beyond IP by adopting new tools and distributive justice from an international perspective.¹⁰⁰

⁹⁸ *Id.*

⁹⁹ See *Collaboration Agreements*, WORLD INTELL. PROP. ORG. (Aug. 24, 2016), www.wipo.int/export/sites/www/research/docs/collaboration_agreements.pdf.

¹⁰⁰ Article 31 of the TRIPS Agreement provides:

Where the law of a Member allows for other use of the subject matter of a patent without the authorization of the right holder, including use by the government or third parties authorized by the government, the following provisions shall be respected: (a) authorization of such use shall be considered on its individual merits; (b) such use may only be permitted if, prior to such use, the proposed user has made efforts to obtain authorization from the right holder on reasonable commercial terms and conditions and that such efforts have not been successful within a reasonable period of time. This requirement may be waived by a Member in the case of a national emergency or other circumstances of extreme urgency or in cases of public non-commercial use. . . .

For additional perspectives on TRIPS, see Donald Harris, *TRIPS after Fifteen Years: Success or Failure, as Measured by Compulsory Licensing*, 18 J. INTELL. PROP. L. 367, 386 (2011); Jessica J. Fayerman, *The Spirit of TRIPS and the Importation of Medicines Made under Compulsory License after the August 2003 TRIPS Council Agreement*, 25 NW. J. INT'L L. & BUS. 257, 258 (2004); Divya Murthy, *The Future of Compulsory Licensing: Deciphering the Doha Declaration on the TRIPS Agreement and Public Health*, 17 AM. U. INT'L L. REV. 1299, 1307–08 (2001); Sara Germano, *Compulsory Licensing of Pharmaceuticals in Southeast Asia: Paving the Way for Greater Use of the TRIPS Flexibility in Low-and Middle-Income Countries*, 76 UMKC L. REV. 273, 294 (2007).