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**LAW AND ECONOMICS OF COPYRIGHT IN CORPORATE
INNOVATION AND WELFARE ENHANCEMENT**

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INTRODUCTION

“A COPYRIGHT WILL PROTECT YOU FROM PIRATES. And make you a fortune. If you have a PLAY, SKETCH, PHOTO, ACT, SONG or BOOK that is worth anything, you should copyright it. Don’t take chances when you can secure our services at small cost”¹ This is an excerpt from an advertisement in 1906 by Columbia Copyright & Patent Co. Inc.² Economic principles of wealth maximization³, risk aversion⁴, and cost-benefit analysis⁵ emanate from this advertisement urging creators to seek copyright protection.

Copyright protects original works of creative expression.⁶ Copyright owners have the exclusive right to reproduce, publicly perform, or display the copyrighted work, create derivative works from the copyrighted work, and distribute copies of the copyrighted work.⁷ Edwin C. Hettinger reports that most copyrights are owned by institutions including corporations.⁸ Without copyright protection, many companies are threatened by competitors who copy the companies’ creative works at low cost and sell the copies at reduced prices.⁹

Economic principles underlie the legal protection of copyright and corporations’ strategic plans for innovation. More than a century after Columbia Copyright & Patent Company’s advertisement in 1906, with the advent of novel technologies, analysis in law and economics remains vital in the evaluation of copyright policies for public welfare and corporate initiatives for innovation.

This article first analyzes concepts of law and economics in the welfare justification of copyright (**I**). This article then applies this examination to critique the United States Supreme Court’s adjudication of a corporation’s initiative to provide the public with copyrighted audiovisual content through innovative technology (**II**).

¹ Advertisement for Columbia Copyright & Patent Company from *The New York Clipper*, Nov. 3, 1906, Library of Congress, United States of America, <https://www.loc.gov/exhibits/bobhope/vaude.html#obj036> (last visited Mar. 29, 2024).

² *Id.*

³ Richard A. Posner, *Utilitarianism, Economics, and Legal Theory*, 8 J. LEGAL STUDS. 103, 119 (1979).

⁴ 8.1 *Risk Aversion and the Allocation of Risk*, HARV. UNIV., <https://cyber.harvard.edu/bridge/LawEconomics/risk.htm> (last visited Mar. 29, 2024).

⁵ PWC, UNDERSTANDING THE COSTS AND BENEFITS OF INTRODUCING A ‘FAIR USE’ EXCEPTION 14-15 (2016).

⁶ Edwin C. Hettinger, *Justifying Intellectual Property*, 18 PHIL. & PUB. AFF. 31, 32 (1989).

⁷ *Id.* at 34.

⁸ *See id.* at 46.

⁹ *Id.* at 47; see also *Audio and Video First Sale Doctrine: Hearings on H.R. 1027, H.R. 1029, and S. 32 Before the Subcomm. of Cts., C.L. & the Admin. of Just. of the H. Comm. on the Judiciary*, 98th Cong. 720 (1985) (referencing section titled “Tough to Get Compensation,” discussing movie-producing corporations’ difficulty in obtaining compensation in the face of individuals and entities who copy movies on cassettes at low cost).

I. LAW AND ECONOMICS IN THE WELFARE JUSTIFICATION OF COPYRIGHT

Law and economics play an important role in justifying intellectual property rights. According to Mark Lemley et al., an individual or an entity may possess tangible property exclusively.¹⁰ However, intellectual property such as creative expressions is often intangible and can be accessed by multiple people.¹¹ As a result, theories justifying exclusive rights in tangible property do not apply to intellectual property rights.¹² Alternative theories are needed to explain why authors should be entitled to copyright.¹³ One such alternative theory is the “utilitarian or economic incentive framework.”¹⁴

An application of such theory can be found in the Copyright Clause of the United States Constitution. The Copyright Clause declares that “Congress shall have Power”¹⁵ to “promote the Progress of . . . useful Arts, by securing for limited Times to Authors . . . the exclusive Right to their respective Writings”¹⁶ A utilitarian reasoning underlies this Clause.¹⁷ Utilitarianism aims to maximize the happiness of the population.¹⁸ The United States Constitution employs copyright as a means to promote progress and thereby contribute to public welfare.¹⁹

Thus, principles in law and economics provide a justification for copyright protection on the grounds of augmenting welfare. Copyright protection presents a solution for the potential under-production of creative works (**A**). However, copyright protection also creates a paradox of aiming to incentivize greater production of creative works at the expense of restricting access to these creations (**B**).

A. Copyright as a Solution for Under-Production of Public Goods

Granting copyright protection to creators is one solution for preventing the risk that valuable creative works, having the characteristics of public goods, will be under-produced. This under-supply of creative works occurs due to the low marginal cost of creating unauthorized copies (**1**). Copyright protection helps creators overcome the threat of low-priced copies by giving creators a time-limited monopoly to exclude competitors from making unauthorized copies (**2**).

¹⁰ Mark A. Lemley, Peter S. Menell & Robert P. Merges, *Intellectual Property in the New Technological Age: 2016*, I-2 (Stan. Pub. L., Working Paper No. 2780190, 2016).

¹¹ *Id.* at I-2.

¹² *Id.*

¹³ *Id.*

¹⁴ *Id.*

¹⁵ U.S. CONST. art. I, § 8, cl. 1.

¹⁶ *Id.* art. I, § 8, cl. 8.

¹⁷ Hettinger, *supra* note 6, at 47.

¹⁸ JEREMY BENTHAM, AN INTRODUCTION TO THE PRINCIPLES OF MORALS AND LEGISLATION 14-15 (Batoche Books 2000) (1781).

¹⁹ Hettinger, *supra* note 6, at 47.

(1) Risk of Under-Supply through Low Marginal Cost of Unauthorized Copies

The risk of under-supply of public goods occurs because competitors of creators incur relatively low marginal cost for selling copies of the goods without the creators' authorization.²⁰ These unauthorized sales often discourage creators from producing beneficial works.²¹

Creative works may be considered as public goods²² for two reasons. First, they are non-rivalrous²³ because a company releasing a film, for example, will likely have difficulty preventing others from viewing, recording, or sharing copies of the film without authorization.²⁴ Second, creative works are nonexcludable.²⁵ If a music-producing company made a recording of a performance of, for example, Johann Sebastian Bach's Goldberg Variations available only to paying subscribers, the company may face difficulty excluding non-paying individuals from listening to the performance through online platforms that provide pirated works.²⁶

Creators incur cost of expression for producing copyrightable works.²⁷ The cost of expression includes the authors' time and effort.²⁸ It also includes corporations' costs for solicitation and distribution of works.²⁹

Despite creators' high cost of expression for generating works, their competitors' marginal cost for producing unauthorized copies of the works is often low.³⁰ The marginal cost is the cost of producing one additional unit of the good.³¹ In the digital environment, the marginal cost of distributing a pirated copy of a work is nearly zero.³² Such low marginal cost allows competitors to sell unauthorized copies at a price lower than the price that the creator of the

²⁰ See Inge Kaul, *Global Public Goods: Explaining Their Underprovision*, 15 J. INT'L ECON. L. 729, 729-36 (2012) (discussing free-riding).

²¹ See Carsten Fink et al., World Bank Group, *The Economic Effects of Counterfeiting and Piracy*, at 2-3, 9 (World Bank Grp., Working Paper No. 7586, 2016).

²² William M. Landes & Richard A. Posner, *An Economic Analysis of Copyright Law*, 18 J. LEGAL STUDS. 325, 326 (1989); Lemley, Menell & Merges, *supra* note 10, at 1-14.

²³ STEVEN A. GREENLAW, DAVID SHAPIRO & DANIEL MACDONALD, *PRINCIPLES OF ECONOMICS* 3E 318-22 (3d ed. 2022).

²⁴ *Film and music piracy*, INDIRECT, <https://www.nidirect.gov.uk/articles/film-and-music-piracy> (last visited Apr. 11, 2024).

²⁵ GREENLAW, SHAPIRO & MACDONALD, *supra* note 23.

²⁶ See, e.g., *About Piracy*, Resources & Learning, RECORDING INDUS. ASS'N OF AMERICA, <https://www.riaa.com/resources-learning/about-piracy/> (last visited Apr. 11, 2024).

²⁷ Landes & Posner, *supra* note 22, at 326.

²⁸ *Id.* at 327.

²⁹ *Id.*

³⁰ *Id.* at 326.

³¹ HOWELL E. JACKSON, LOUIS KAPLOW, STEVEN M. SHAVELL, W. KIP VISCUSI & DAVID COPE, *ANALYTICAL METHODS FOR LAWYERS* 277 (3d ed. 2018).

³² Hettinger, *supra* note 6, at 34; William Fisher, *Welfare Theory: The Utilitarian Framework*, YOUTUBE, at 14:25 (Feb. 3, 2015), <https://www.youtube.com/watch?v=3ISstJYsCWs>.

work wishes to sell.³³ Then, the creator would lower its price.³⁴ Its competitors may then lower its price further.³⁵ This interaction continues until the price is approximately equal to the creator's marginal cost.³⁶

Under these circumstances, with competitors' low marginal cost and plummeting prices, creators of works might be reluctant to produce new works.³⁷ This is because creators' return in this environment is likely to be lower than their high cost of expression.³⁸ Creators will not generate works if their expected return is lower than their cost of expression.³⁹

Consequently, an under-supply of creative works occurs.⁴⁰ Even though these works are beneficial to the public, creators tend to supply insufficient quantities of these works because their competitors can replicate them at low marginal cost.⁴¹

(2) *Provision of Copyright Incentives through Suppression of Competition*

Providing creators with copyright protection gives these creators the incentives to produce creative works.⁴² This is because copyright law suppresses competitors' capacity to sell unauthorized copies at a lower price.⁴³

Copyright law allows a copyright owner to exclude others from replicating or distributing its creative expression without authorization.⁴⁴ Thus, when the copyright owner sells its work at a certain price, the copyright owner can prevent its competitors from copying the work and selling it at a lower price.⁴⁵ As a result, the copyright owner can sell its work at a price at which its marginal revenue equals its marginal cost.⁴⁶ This is the price that maximizes the

³³ William Fisher, *Welfare Theory: The Incentive Theory of Copyright*, YOUTUBE, at 8:26 (Feb. 2, 2015), <https://www.youtube.com/watch?v=t9wqQNCC-Vs>.

³⁴ *Id.* at 8:55.

³⁵ *Id.* at 9:04.

³⁶ *Id.* at 9:05-9:33.

³⁷ *Id.* at 11:09.

³⁸ See Lemley, Menell & Merges, *supra* note 10, at I-13, 15 (2016).

³⁹ *Id.* at I-13.

⁴⁰ Fisher, *Welfare Theory: The Incentive Theory of Copyright*, *supra* note 33, at 11:09; Lemley, Menell & Merges, *supra* note 10, at I-15.

⁴¹ See Lemley, Menell & Merges, *supra* note 10, at I-14, 15; see also Fisher, *Welfare Theory: The Utilitarian Framework*, *supra* note 32, at 28:29.

⁴² WILLIAM M. LANDES & RICHARD A. POSNER, *THE ECONOMIC STRUCTURE OF INTELLECTUAL PROPERTY LAW* 74 (2003).

⁴³ See ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, *LICENSING OF IP RIGHTS AND COMPETITION LAW: BACKGROUND NOTE BY THE SECRETARIAT* 5 (2019), [https://one.oecd.org/document/DAF/COMP\(2019\)3/en/pdf](https://one.oecd.org/document/DAF/COMP(2019)3/en/pdf).

⁴⁴ Landes & Posner, *supra* note 22, at 326; LAURE MARINO, *DROIT DE LA PROPRIÉTÉ INTELLECTUELLE* 1, 171 (2013); PIERRE-YVES GAUTIER, *PROPRIÉTÉ LITTÉRAIRE ET ARTISTIQUE* 813 (11e édition enrichie, 2019).

⁴⁵ Fisher, *Welfare Theory: The Incentive Theory of Copyright*, *supra* note 33, at 11:49.

⁴⁶ *Id.* at 18:45.

copyright owner's total profit from selling its work.⁴⁷ It is a price that is above the copyright owner's marginal cost.⁴⁸

In this way, by granting creators a time-limited right to exclude unauthorized replication and distribution, copyright law provides creators with an environment in which they can recoup their cost of expression by selling their work at a profit-maximizing price.⁴⁹ This mechanism of copyright law gives creators the incentive to generate new creative works.⁵⁰

It should be noted, however, that providing creators with this incentive through copyright law generates loss for society. Suppose the copyright owner sells its work at a profit-maximizing price of 100 dollars. No other copy is available. Every consumer who is willing to purchase the work only at a price less than 100 dollars would not be able to purchase this work. This is a foregone consumer surplus that prevents consumers from accessing the work and benefiting from the work.⁵¹ This foregone consumer surplus constitutes a loss of welfare for society.

B. Paradox between Copyright Incentive Benefits and Social Welfare Loss

Copyright law thus yields a paradox involving the benefits of copyright incentives and the resulting loss of social welfare.⁵² Copyright aims to increase the production and availability of creative works by giving incentives to copyright owners through time-limited monopoly rights over their work.⁵³ However, copyright decreases the availability of creative works by restricting access to these works.⁵⁴

Considering this paradox, it is imperative to balance the benefits of copyright incentives and the social welfare loss due to restricting access to copyrighted works.⁵⁵ William M. Landes and Richard A. Posner argue that achieving the “correct balance” between incentives and access is “the central problem in copyright law.”⁵⁶

Accordingly, copyright law may be justified under this balancing analysis only if the copyright policy generates benefits that are sufficiently greater than

⁴⁷ Timothy Taylor & Steven A. Greenlaw, 9.2 *How a Profit-Maximizing Monopoly Chooses Output and Price*, in PRINCIPLES OF ECONOMICS (2016), <https://pressbooks-dev.oer.hawaii.edu/principlesofeconomics/chapter/9-2-how-a-profit-maximizing-monopoly-chooses-output-and-price/>.

⁴⁸ *Id.* at Figure 4; LEMLEY, MENELL & MERGES, *supra* note 10, at I-15.

⁴⁹ Fisher, *Welfare Theory: The Utilitarian Framework*, *supra* note 32, at 37:18.

⁵⁰ LEMLEY, MENELL & MERGES, *supra* note 10, at I-15.

⁵¹ LEMLEY, MENELL & MERGES, *supra* note 10, at I-15; Julie E. Cohen, *Copyright and the Perfect Curve*, 53 VAND. L. REV. 1799 (2000).

⁵² Hettinger, *supra* note 6, at 48.

⁵³ *Id.*

⁵⁴ *Id.*

⁵⁵ Landes & Posner, *An Economic Analysis of Copyright Law*, *supra* note 22, at 326.

⁵⁶ *Id.*

any accompanying costs to society.⁵⁷ This analysis involves a balance of costs and benefits in a temporal dimension (1) and in a spatial dimension (2).

(1) Balance of Temporal Dimension in Cumulative Creations

First, the balancing of costs and benefits of copyright has a temporal dimension because copyright protection of past works may restrict present authors' capacity to produce cumulative creations.⁵⁸ The benefits from past authors' copyright protection are balanced with the restrictions that it imposes on present authors who wish to produce creations that build upon past authors' works.

For instance, the copyright doctrine of idea-expression distinction provides that authors may not copyright their ideas.⁵⁹ From a temporal dimension, this doctrine reduces the costs of copyright protection. Since ideas are not protected by copyright, present authors are free to apply and develop the ideas of past authors. As a result, on balance, the doctrine of idea-expression distinction provides past authors with benefits of copyright protection while limiting its costs to present authors so that they can create cumulative works.⁶⁰ This constitutes a balancing from a long-term perspective.

(2) Balance of Spatial Dimension in Disseminations of Knowledge

Second, the balancing of costs and benefits of copyright protection has a spatial dimension concerning the dissemination of knowledge to the public. At one given time, copyright law provides benefits to certain individuals and entities by incentivizing authors to create more works and making them available to those who can afford them. However, at this given time, certain other individuals and entities who cannot afford them might be effectively excluded from these works. Those in one space benefit from copyright protection while those in another space incur costs from this copyright protection by not being able to access the works. These two interests must be balanced.

For example, some copyright owners of films sell DVDs or digital streaming of these films only to educational institutions at a price that is more than ten times higher than the price normally offered to individual consumers.⁶¹ This

⁵⁷ LEMLEY, MENELL & MERGES, *supra* note 10, at I-16.

⁵⁸ GIANCARLO FROSIO, RECONCILING COPYRIGHT WITH CUMULATIVE CREATIVITY 22 (2018); Stephanie Holmes Didwania, *Copyright Protection and Cumulative Creation: Evidence from Early Twentieth-Century Music*, 47 J. LEGAL STUDS. 235, 235.

⁵⁹ *Feist Publications, Inc. v. Rural Telephone Service Co.*, 499 U.S. 340, 344-45 (1991); *Lotus Development Corp. v. Borland International Inc.*, 49 F.3d 807 (1st Cir. 1995), *aff'd*, 516 U.S. 233 (1996); *Google v. Oracle*, 141 S. Ct. 1183, 1196 (2021).

⁶⁰ Landes & Posner, *An Economic Analysis of Copyright Law*, *supra* note 22, at 333.

⁶¹ Fisher, *Welfare Theory: The Incentive Theory of Copyright*, *supra* note 33, at 24:18-25:06.

high price includes a permission to publicly perform the films.⁶² A copyright owner has the right to exclude others from publicly performing its copyrighted work.⁶³ The high price that an educational institution pays to the copyright owner includes a license to publicly perform the film.⁶⁴ This means that those who cannot afford the high price and cannot attend public performances provided by the educational institution do not have access to the copyrighted film.

The costs of this inaccessibility may be high, especially if the copyrighted work has the quality of an indispensable good akin to infrastructure. In such a case, a spatial balancing of the costs and benefits of copyright protection would suggest that enforcing a copyright owner's public performance rights may be detrimental to welfare in society.

II. CRITIQUES AND APPLICATIONS IN COPYRIGHT ADJUDICATION OF CORPORATE INNOVATION

The enforcement of public performance rights held by large media corporations owning copyright stirred controversy in the case of *American Broadcasting Companies, Inc. et al. v. Aereo, Inc.*, 573 U.S. 431 (2014) (herein referred to as "*Aereo*"), decided by the United States Supreme Court. This ruling was an adjudication of corporate endeavor for enhancing public access to copyrighted audiovisual works (**A**). Economic analyses of copyright law may be applied to critique the outcome of this adjudication and provide alternative solutions for encouraging corporate initiatives to augment welfare in society through technological innovation (**B**).

A. Adjudication of Corporate Endeavor for Public Access to Creative Works

In *Aereo*, the United States Supreme Court issued a decision involving Aereo's corporate initiative to generate a technical configuration for providing consumers with lawful personal copies of copyrighted multi-media content (**1**). However, the Court's decision in *Aereo* applied judicial precedent and reached a conclusion that thwarts corporate efforts to provide innovative solutions for augmenting welfare in society (**2**).

(1) Technical Configuration for Lawful Personal Copies under Copyright Law

The United States Supreme Court in *Aereo* held that Aereo unlawfully conducted public performance in violation of copyright owned by American

⁶² *Id.*; Copyright: Public Performance Rights, Wright State University, <https://guides.libraries.wright.edu/c.php?g=421664&p=5812293>.

⁶³ Copyright Information Center: Video & Public Performance Rights, Loyola/Notre Dame Library, <https://guides.lndlibrary.org/copyright/ppr>.

⁶⁴ Fisher, *Welfare Theory: The Incentive Theory of Copyright*, *supra* note 33, at 25:02.

Broadcasting Companies et al. when Aereo developed a new technological mechanism that allows consumers to watch copyrighted media content.⁶⁵ The plaintiffs in this case, American Broadcasting Companies et al., produce, market, distribute, and broadcast audiovisual programs.⁶⁶ They own copyright protecting the media content at issue.⁶⁷

Section 106(4) of the United States Copyright Act provides that a copyright owner has the exclusive rights “to perform the copyrighted work publicly.”⁶⁸ Thus, in the present case, American Broadcasting Companies et al., as copyright owners, have the exclusive rights to perform their copyrighted audiovisual works publicly.⁶⁹

Aereo was a corporation that created an innovative transmission system using “thousands of dime-sized antennas.”⁷⁰ Each antenna was assigned to one subscriber of Aereo’s service.⁷¹ This tiny antenna caught the broadcasting of a copyrighted audiovisual program and transmitted it only to the specific subscriber assigned to this antenna.⁷² Aereo argued that this transmitted content was a “personal copy” for this individual subscriber.⁷³

Under the doctrine of fair use, a personal use of copyrighted work may, in certain instances, be permitted as fair use.⁷⁴ Aereo designed its system so that each subscriber would receive a personal copy of the program from a dedicated antenna that sends it only to the subscriber for personal use. Thus, Aereo’s system may be considered as an attempt to construct a technical mechanism that is lawful under the fair use doctrine in copyright law. Despite Aereo’s attempts, the United States Supreme Court applied legal precedent and found that Aereo’s conduct constitutes copyright infringement.⁷⁵

(2) *Judicial Thwarting of Corporate Initiatives through Legal Precedent*

The decision by the United States Supreme Court in *Aereo* can be considered an application of legal precedent that risks thwarting corporate initiatives. Many of these initiatives are important because they contribute to novel technology for augmenting welfare by disseminating creative work to society.

⁶⁵ *Am. Broad. Cos. v. Aereo, Inc.*, 573 U.S. 431, 451 (2014).

⁶⁶ *Id.* at 437.

⁶⁷ *Id.*

⁶⁸ 17 U.S.C. §106(4).

⁶⁹ *Aereo, Inc.*, 573 U.S. at 437.

⁷⁰ *Id.* at 436.

⁷¹ *Id.*

⁷² *Id.*

⁷³ *Id.* at 436-37.

⁷⁴ *See, e.g.*, 17 U.S.C. § 107; *Sony Corp. of Am. v. Universal City Studios, Inc.*, 464 U.S. 417, 447–50 (1984); Jessica D. Litman, *Lawful Personal Use*, 85 TEX. L. REV. 1871, 1873 (2007).

⁷⁵ *Aereo, Inc.*, 573 U.S. at 451.

The Court found that Aereo's technological transmission system was substantially similar to the transmission systems which were at issue in *Fortnightly Corporation v. United Artists Television, Inc.*⁷⁶ and in *Teleprompter Corporation v. Columbia Broadcasting System, Inc.*⁷⁷ Congress amended the Copyright Act and enacted Section 106(4) so that transmission by these systems in *Fortnightly* and *Teleprompter* would be an unlawful public performance in violation of copyright.⁷⁸ Thus, reasoning by analogy, the Court decided that the transmission by Aereo's system is also an unlawful public performance in violation of plaintiffs' copyright.⁷⁹

B. Encouragement of Innovation through Economic Analysis of Copyright

An analysis from the perspective of law and economics suggests that the United States Supreme Court should have decided *Aereo* differently to encourage corporate initiatives for developing technological innovations that augment welfare in society. Thus, the application of law and economics provides an insightful viewpoint to critique the Court's reliance on legal precedent (1). Moreover, behavioral analysis may be applied to challenge certain economic assumptions justifying copyright protection of audiovisual works in digital environments (2).

(1) Critiques of Legal Precedent through Welfare Justification of Copyright

The United States Supreme Court's reasoning in *Aereo* may be critiqued through a cost-benefit analysis under law and economics. The Court upheld the copyright protection of American Broadcasting Companies et al.⁸⁰

The economic benefit of this ruling is that American Broadcasting Companies et al. can charge a profit-maximizing price to consumers who receive the audiovisual programs that they transmit.⁸¹ This is because copyright law allows American Broadcasting Companies et al. to exclude their competitors, including Aereo, from publicly performing their copyrighted works without authorization.⁸² Even if Aereo charges a lower price to its subscribers, copyright law allows American Broadcasting Companies et al. to stop this practice.⁸³ Hence, they can continue charging their profit-maximizing price.⁸⁴

⁷⁶ *Fortnightly Corp. v. United Artists Television, Inc.*, 392 U.S. 390 (1968).

⁷⁷ *Teleprompter Corp. v. Columbia Broad. Sys., Inc.*, 415 U.S. 394 (1974).

⁷⁸ *Am. Broad. Cos. v. Aereo, Inc.*, 573 U.S. 431, 438-41 (2014).

⁷⁹ *Id.* at 451.

⁸⁰ *Id.*

⁸¹ *Id.* at 436-37.

⁸² *Id.*

⁸³ *Id.*

⁸⁴ *Id.*

The economic cost of the *Aereo* ruling, however, may outweigh this benefit. The Court declared that the “behind-the-scenes way in which Aereo delivers television programming” does not matter in determining whether Aereo’s practice is lawful.⁸⁵ However, Aereo had presumably designed the “behind-the-scenes” technology so that it would be lawful under the fair use doctrine of copyright law.⁸⁶ This attempt appears to constitute an important due diligence by a corporation to design the technical configuration of its business to be lawful. Such corporate efforts are important and should not be discouraged.

Moreover, Aereo’s system was a technology that could enable many individuals in society to gain access to audiovisual creations that likely enrich their culture, knowledge, and experience. Such technology augments welfare in society. If a myriad of corporations similar to Aereo are thwarted from making corporate endeavours to develop such potentially useful technological innovations, the resulting economic loss to society could be cumulatively significant.

Hence, although the Court relied on analogical reasoning by comparing Aereo’s system with the unlawful systems in the precedents of *Fortnightly* and *Teleprompter*, an analysis under law and economics suggests that Aereo’s system should have been allowed as fair use. This is the result that, on balance, enhances the welfare of society by encouraging corporate initiatives for constructing innovative, useful, and lawful technological infrastructure.

A counterargument to this analysis is that Aereo obtained subscription fees from its consumers.⁸⁷ Therefore, the personal use of the personal copies that each subscriber enjoyed is associated with economic profit that Aereo obtained by charging a fee. This economic profit may be considered as an unlawful gain that Aereo obtained at the expense of publicly performing copyrighted programs without any authorization from American Broadcasting Companies et al. who owned the copyright for these audiovisual programs. This consideration may militate against deciding that Aereo’s system is entirely lawful.

(2) Behavioral Challenges to Economic Assumptions in Digital Environments

At the same time, copyright protection of creative works in digital environments may be re-evaluated pursuant to a behavioral analysis. Such behavioral analysis challenges the assumptions of law and economics that contributed to justifying copyright protection. Two behavioral challenges may be made.

First, the justification of copyright protection under law and economics assumes that copyright owners can identify copyright infringers and prevent

⁸⁵ *Id.* at 446.

⁸⁶ *See supra* Section II.A.(1).

⁸⁷ *Am. Broad. Cos. v. Aereo, Inc.*, 573 U.S. 431, 436 (2014).

them from distributing unauthorized copies at lower prices.⁸⁸ However, this assumption may not hold in digital environments.

From a behavioral perspective, individuals and entities in digital environments can often easily create and share unauthorized replications of copyrighted digital works.⁸⁹ Considering the vast number of such users and the opaqueness of how unauthorized replications are distributed, it is costly for copyright owners to detect these unauthorized copies, identify the perpetrators, and compel them to cease copyright infringement.⁹⁰

Second, the law-and-economics rationale for copyright protection also assumes that the availability of copyright to help creators charge a profit-maximizing price will serve as an incentive for creators to generate greater quantities of original works.⁹¹ This assumption may be challenged from a behavioral standpoint.

Empirical research indicates that non-monetary factors can be a strong incentive for individuals to produce creative works.⁹² Passion for art may be enough for individuals to devote themselves to create artistic works.⁹³ A desire to seek truth may be enough for researchers to create scholarship with enthusiasm.⁹⁴ Contributing to the collective knowledge of humanity by sharing one's work may also provide individuals with a sense of achievement and fulfillment.⁹⁵ With tools for electronic transmission and platforms, the digital environment provides ample means for making such intellectual contributions.

These behavioral observations suggest that strict reliance on copyright protection in digital environments may merit reconsideration. Ronald Coase states that, in the absence of transaction costs, private arrangements may lead to an optimal allocation of resources that increases the value of production.⁹⁶ Ralph K. Winter, Jr. argues that, without an overarching federal regulation of corporations, competition among state corporate laws may lead to an optimal solution.⁹⁷ Dennis W. Carlton and Daniel R. Fischel suggest that private parties

⁸⁸ See *supra* Section I.A.(2).

⁸⁹ Irina Atanasova, *Copyright Infringement in Digital Environment*, J.L. ECON., Abstract (Nov. 2019), https://www.researchgate.net/publication/339077032_COPYRIGHT_INFRINGEMENT_IN_DIGITAL_ENVIRONMENT.

⁹⁰ See *id.*

⁹¹ See *supra* Section I.A.(2).

⁹² Alexander Cuntz, *Copyright and the Currency of Creativity: Beyond Income*, WORLD INTELLECTUAL PROPERTY ORGANIZATION (June 2019), https://www.wipo.int/wipo_magazine/en/2019/03/article_0003.html.

⁹³ See *id.*

⁹⁴ Fisher, *Welfare Theory: The Utilitarian Framework*, *supra* note 32, at 25:40.

⁹⁵ *Id.* at 25:49.

⁹⁶ Ronald H. Coase, *The Problem of Social Cost*, 3 J. L. & ECON. 1, 15 (1960).

⁹⁷ Ralph K. Winter, Jr., *State Law, Shareholder Protection, and the Theory of the Corporation*, 6 J. LEGAL STUDS. 251, 289 (1977).

may engage in transactions that result in allocating the property right in information to the party that values this right the most.⁹⁸

These concepts may be applied to copyright regulation as well. Instead of a rigid copyright regulation that prohibits all copyright infringement, private individuals and entities may prefer to explore arrangements that enable them to strike an optimal balance between the production of creative works and the enhancement of welfare in society.

CONCLUSION

In “The Little Prince,” Antoine de Saint-Exupéry wrote that “the most important [thing] is invisible”⁹⁹ Richard A. Posner presents the maximization of wealth as the criterion for achieving “the good, the right, or the just.”¹⁰⁰ Does this wealth-maximization theory¹⁰¹ appear to prioritize money and denigrate everything else that does not contribute to wealth? There are many important values that cannot be reflected in a monetary amount. An application of the wealth-maximization theory might risk leading to problematic judgments that fail to capture many non-monetary qualities that are truly important.

At the same time, however, an analysis of copyright law through the application of law and economics illuminates how concepts in law and economics can broaden one’s perspective. Courts might have a narrow focus on applying precedents and analogical reasoning to the facts before them. However, applying principles of law and economics can transform this myopia into an expansive, long-term perspective.

Such viewpoints from law and economics are vital because they enable one to discover crucial elements that are missing from a court’s judgment. They include the importance of encouraging corporate endeavors, the significance of taking initiatives to develop lawful, useful technology, and the conscience of enhancing welfare in society.

⁹⁸ Dennis W. Carlton & Daniel R. Fischel, *The Regulation of Insider Trading*, 35 STANFORD L. REV. 857, 863 (1983).

⁹⁹ ANTOINE DE SAINT-EXUPÉRY, LE PETIT PRINCE, <https://gutenberg.net.au/ebooks03/0300771h.html> (« Le plus important est invisible . . . »).

¹⁰⁰ Richard A. Posner, *Utilitarianism, Economics, and Legal Theory*, 8 J. LEGAL STUDS. 103, 199 (1979).

¹⁰¹ *See id.* at 136.