

COPYRIGHT'S TECHNOLOGICAL INTERDEPENDENCIES

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INTRODUCTION

Debates about the effects of technology on creative output have raged for some time and have intensified in recent years.¹ On the one hand, some proponents of nearly unfettered technological advancement argue that it is largely a boon to creative output and that copyright frequently operates to impede both creative output and technological innovation.² Copyright, therefore, should be relaxed in significant respects.³ Indeed, some go so far as to argue that copyright in today's technological world can often be dispensed with; the purported incentive spark of copyright is unnecessary to facilitate creative activity in many contexts.⁴ Technological advancements

* Associate Professor of Law, BYU Law. Many thanks to BYU Law School for a generous research grant, without which much of this research would not have been possible, and to my research assistant, Kevin Brown.

¹ See Jessica Litman, *Revising Copyright Law for the Information Age*, 75 OR. L. REV. 19 (1996) (arguing that attempts to maintain old copyright rules in the face of technological changes is the wrong approach); JESSICA LITMAN, DIGITAL COPYRIGHT 111 (2001) (reviewing the various challenges presented by new technology); Ben Depoorter, *Technology and Uncertainty: The Shaping Effect on Copyright Law*, 157 U. PA. L. REV. 1831 (2009) (examining the relationship between technology and copyright law and arguing that rapid technological change creates legal delay and uncertainty, which in turn lead to anticopyright sentiments, greater reliance on self-help by content providers and users, and induce legislative involvement in copyright law); Keiyana Fordham, *Can Newspapers Be Saved? How Copyright Law Can Save Newspapers from the Challenges of New Media*, 20 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 939 (2010) (arguing that digital technologies have partially undermined the newspaper industry and proposing copyright reforms that can help address this issue).

² See, e.g., Edward Lee, *Technological Fair Use*, 83 S. CAL. L. REV. 797 (2010) (arguing that copyright law, as currently implemented, is ill-equipped to deal with various technological challenges to it, and proposing as a partial solution to such problems a fair use defense to copyright infringement that more fully takes into account technological considerations); Mark A. Lemley, *Is the Sky Falling on the Content Industries?*, 9 J. TELECOMM. & HIGH TECH. L. 125 (2011) (arguing that technology, rather than being a threat to the content industries, is typically a boon to them, and offering several suggestions as to how the content industries can adjust their business models in order to succeed in the digital age).

³ See, e.g., Lee, *supra* note 2; F. Gregory Lastowka, *Free Access and the Future of Copyright*, 27 RUTGERS COMPUTER & TECH. L.J. 293 (2001) (arguing that copyright law should be relaxed in certain respects in order to more effectively take into account the growing trend of free content distribution).

⁴ See, e.g., Eben Moglen, *Anarchism Triumphant: Free Software and the Death of Copyright*, 4 First Monday (1999), available at

and other non-copyright-related factors are often sufficient to spur enormous amounts of creative activity.⁵

In contrast, others argue that copyright remains a vital institution, and that unconstrained technological advancements threaten creative output by facilitating copyright infringement and generally devaluing creative works.⁶ Therefore, some in this camp argue for bolstering copyright protections in order to ward off the threat to creative output that technological advancements present.⁷ Laws such as the Digital Millennium Copyright Act (“DMCA”) and court holdings effectively banning certain digital technologies exemplify the results of such efforts.⁸

In this Article, I argue that a significant cause of the disconnect between these two sides lies in how copyright has often been conceptualized, and

<http://firstmonday.org/ojs/index.php/fm/article/view/684/594> (arguing that the free software movement shows that the incentives of copyright are largely irrelevant to creative output in the software world); Sara K. Stadler, *Forging a Truly Utilitarian Copyright*, 91 IOWA L. REV. 609 (2006) (arguing that copyright may not be necessary as an incentive spark for the fine arts).

⁵ Moglen, *supra* note 4; David Lange, *Reimagining the Public Domain*, LAW & CONTEMP. PROBS., Winter/Spring 2003, at 463, 482-83 (arguing that creative activity often flows from “creative play” rather than being caused by copyright per se); Jeanne C. Fromer, *Expressive Incentives in Intellectual Property*, 98 VA. L. REV. 1745, 1771-81 (2012) (discussing important non-pecuniary interests that spur innovative and creative activities).

⁶ See, e.g., John M. Newman, *Copyright Freeconomics*, 66 VAND. L. REV. 1409 (2013) (arguing that a growing trend of zero-price content brought about through technological changes undermines the economic model underpinning copyright law and suggesting changes to copyright law in order to preserve its relevance); Scott Timberg, *It’s Not Just David Byrne and Radiohead: Spotify, Pandora and How Streaming Music Kills Jazz and Classical*, SALON (Jul. 20, 2014, 2:00 PM MDT), http://www.salon.com/2014/07/20/its_not_just_david_byrne_and_radiohead_spotify_pandora_and_how_streaming_music_kills_jazz_and_classical/; Tim Waterstone, *Amazon Is Discounting Us to Death*, THE GUARDIAN (Apr. 6, 2012, 1:00 PM EDT), <http://www.theguardian.com/commentisfree/2012/apr/06/amazon-destroy-britain-book-industry>; ASTRA TAYLOR, *THE PEOPLE’S PLATFORM: TAKING BACK POWER AND CULTURE IN THE DIGITAL ECONOMY* (Fourth Estate 2014).

⁷ See Newman, *supra* note 6; *Strengthen Copyright in Digital Environment – Gambian Minister*, HUMAN IPO (Jan. 8, 2014, 1:00 PM), <http://www.humanipo.com/news/38598/strengthen-copyright-in-digital-environment-gambian-minister/> (Gambian trade minister arguing that copyright must be bolstered in the face of digital technologies); ROBERT LEVIN, *FREE RIDE: HOW DIGITAL PARASITES ARE DESTROYING THE CULTURE BUSINESS, AND HOW THE CULTURE BUSINESS CAN FIGHT BACK* (2012); Fordham, *supra* note 1.

⁸ *Napster I*, 239 F.3d at 1021-24 (confirming that the distributor of a peer-to-peer file sharing program could be liable as a contributory and vicarious infringer); *UMG Recordings, Inc. v. MP3.com, Inc.*, 92 F. Supp. 2d 349, 350-52 (S.D.N.Y. 2000) (holding that defendant’s online posting of MP3 files for access by individuals who could prove that they owned a CD copy was not a protected fair use under copyright law).

that re-conceptualizing it can help solve the impasse. For instance, historically, one of the primary purposes in establishing copyright was to provide creative persons an independent means by which to create.⁹ That is, so long as authors and artists were beholden to kings, churches, or other private and public patrons for their livelihoods—which traditionally had been the case—creative output would be constrained for fear of upsetting the respective patron.¹⁰ Copyright, by granting individuals exclusive rights in their works, was meant to help solve this problem by allowing authors an independent means by which to commercially exploit their works.¹¹ And in so doing, society would benefit as the recipient of a more diverse set of creative works.¹²

Historically, then, patronage and copyright have been viewed as at odds, with copyright conceived of as an independent means by which to eliminate the negative dependencies associated with patronage. While some scholars recognize certain merits of patronage, even in those accounts copyright and patronage are viewed as two different ways of encouraging creative output, rather than as working together in any significant way.¹³

⁹ Sir Thomas Babington Macaulay, Speech Delivered in the House of Commons (Feb. 5, 1841), in FOUNDATIONS OF INTELLECTUAL PROPERTY 310 (ROBERT MERGES & JANE GINSBURG eds., 2004) (arguing that, though copyright as a monopoly comes with some drawbacks, it is much preferable to the preceding systems of patronage); Copyright Law Revision: Hearings on S. 1006 Before the Subcomm. on Patents, Trademarks, and Copyrights of the Senate Comm. on the Judiciary, 89th Cong., 1st Sess. 65 (1965) (statement of Abraham Kaminstein, former Register of Copyrights), *reprinted in* 8 Omnibus Copyright Revision Legislative History at 65 (1976) (indicating that “[t]he basic purpose of copyright protection is the public interest, to make sure that the wellsprings of creation do not dry up through lack of incentive, and to provide an alternative to the evils of an authorship dependent upon private or public patronage.”); Neil Weinstock Netanel, *Copyright and a Democratic Civil Society*, 106 YALE L.J. 283 (1996) (arguing that copyright is not merely a necessary evil, but is a beneficent “state measure that uses market institutions to enhance the democratic character of civil society” and, by encouraging the creation and dissemination of creative works free from patronage, copyright fosters an active, engaged citizenry and participatory democratic institutions); Shubha Ghosh, *Deprivatizing Copyright*, 54 CASE W. RES. L. REV. 387, 429-38 (2003) (describing copyright as a mechanism for eventually displacing the evils associated with public patronage from the crown in England).

¹⁰ *Id.*

¹¹ *Id.*

¹² *Id.*

¹³ See, e.g., Lloyd L. Weinreb, *Copyright for Functional Expression*, 111 HARV. L. REV. 1149, 1233-4 (1998) (identifying patronage as an alternative to copyright that has helped yield creative activity); Mark S. Nadel, *How Current Copyright Law Discourages Creative Output: the Overlooked Impact of Marketing*, 19 BERKELEY TECH. L.J. 785, 845 (2004) (arguing that in many important cases patronage, rather than copyright, has been the key to spurring creative activity); Ghosh, *supra* note 9, at 408 (discussing patronage as an alternative to copyright whose role in yielding creative output is credited).

But conceptualizing copyright as an independent, sufficient system by which to facilitate creative activity is both inaccurate and harmful. From the inception of copyright, creative persons have depended on both copyright and a variety of intermediaries—or patrons—in order to achieve the purposes of copyright, namely, to promote the “Progress of Science and the useful Arts” by facilitating creative activity. While the roles of such intermediaries may have negative consequences in some respects, their significant involvement nevertheless belies the founding mythology behind copyright.

In addition to being inaccurate, this conception of copyright as an independent, sufficient system by which to facilitate creative activity is also harmful because it tends to polarize debates on how to improve the broader creative system. Copyright is often either cast as the enemy or savior, and proposed solutions follow suit. But copyright, though meant to encourage creative activity, does not itself translate directly into creative activity. Instead, it is better conceptualized as one important factor in a series of inputs to a broader creative system. Indeed, thinking of copyright as a standalone system responsible for spurring creative activity overtaxes its capacities and fails to explicitly take into account the interdependent realities of creative activity. Conceptualizing copyright as an interdependent part of a creative system, therefore, provides a more useful framework for analyzing the role of copyright, its interdependencies, and potential solutions to issues related to creative processes.

In this Article, I argue that the broader creative system is increasingly technological in nature, and that copyright, therefore, is increasingly interdependent with what I call “Technological Patronage,” or technological support that many parties provide to the general public, often without an ex ante financial impact on the recipient. I thus argue that, in contrast to the founding and still lingering conceptualization of copyright as an independent system by which to facilitate creative activity, certain forms of Technological Patronage are increasingly important in helping copyright satisfy its constitutional prerogative of promoting the “Progress of Science and useful Arts.”¹⁴ And by the same token, copyright and the creative works that it helps generate spur technological innovation. This Article reviews several significant examples of how Technological Patronage and copyright are increasingly interdependent in facilitating both creative and innovative activity.

This interdependence is further highlighted in examining the roles that Technological Patrons play in helping solve some of copyright’s thornier issues. Because of the tight interrelationship between technological

¹⁴ U.S.C.A. Const. Art. I § 8, cl. 8.

advancements and copyright, Technological Patrons often end up at the forefront of litigation and contractual efforts to answer some of copyright law's most pressing issues. This Article examines some of these efforts in further highlighting the interdependencies between copyright and Technological Patronage.

Such interdependencies, of course, also come with their warts. For instance, Technological Patrons, when wielding too much power, may act in ways that negatively affect society by restricting access to and production of a diverse set of creative works. Amazon's recent spat with Hachette, where Amazon restricted access to and eliminated discounts for some of the major book publisher's offerings in response to a contractual breakdown, is just one example.¹⁵ YouTube's recent threat to shut independent record labels out of the site unless they accede to new contractual terms is yet another.¹⁶ In such cases, antitrust law—rather than an expansion of copyright law—may be the most effective means by which to prevent such outcomes where the synergies between copyright and Technological Patronage appear to break down.

This Article proceeds as follows. Part I explores why many commentators have traditionally argued that copyright is superior to a patronage system, and the purported evils of patronage in general. Part II then examines the growing importance of Technological Patronage. It argues that copyright is increasingly interdependent with Technological Patronage in facilitating diverse creative activity and promoting access to the results of that activity. By the same token, the two also often work together in triggering technological innovation. Thus, the traditional dichotomy between patronage and copyright is a false one; copyright and Technological Patronage are interdependent parts of a creative system, and copyright is increasingly unable to meet its constitutional prerogative on its own, particularly as the world grows increasingly technological.

Part III then explores several different ways in which Technological Patrons are helping solve particularly thorny problems in copyright law today, including issues surrounding a digital first-sale right, digital fair use, and the scope of copyright protection for software. I argue that resolution of such legal issues is also a form of patronage that ultimately helps facilitate creative and innovative activity.

Part IV then examines the ways in which Technological Patrons may harm society by hindering the purposes of copyright. It suggests that the effective application of antitrust law—rather than expanding copyright law—is often the best remedy to many of these possible ills.

I conclude in Part V by exploring some broader legal implications of the

¹⁵ See Part X *infra*.

¹⁶ See Part X *infra*.

growing interdependencies between creative and innovative activity. I suggest that copyright and patent law, while traditionally conceived as separate systems with different purposes, would be best served with doctrinal changes that better reflect and facilitate the interdependencies between creative and innovative activity.

I. THE RISE OF COPYRIGHT LAW AS A REMEDY TO PATRONAGE

The first copyright laws were enacted in part in order to help eliminate the perceived ills of patronage in supporting creative output.¹⁷ The theory ran as follows: so long as authors and artists remained dependent to private and public benefactors for their livelihoods, this dependence would limit both the amount and diversity of creative output. In England, home of the first copyright statute, the debates surrounding extension of the then copyright term include some of the more frequently cited language from Lord Macaulay depicting the evils of patronage:

I can conceive no system more fatal to the integrity and independence of literary men than one under which they should be taught to look for their daily bread to the favour of ministers and nobles. I can conceive no system more certain to turn those minds which are formed by nature to the blessings and ornaments of our species into public scandals and pests.¹⁸

Copyright purportedly addresses these issues by providing authors with independence. In short, by endowing authors with property rights in their works, copyright allows authors to put the fates of their works in the hands of the broader market rather than a single patron. As an initial matter, this “marketable right in one’s expression” thus encourages greater production of creative works.¹⁹ As the U.S. Supreme Court has noted:

The economic philosophy behind the copyright clause [of the U.S. Constitution] . . . is the conviction that encouragement of individual effort by personal gain is the best way to advance public welfare through the talents of authors and inventors.²⁰

¹⁷ See *supra* note 9.

¹⁸ Sir Thomas Babington Macaulay, Speech Delivered in the House of Commons (Feb. 5, 1841), in FOUNDATIONS OF INTELLECTUAL PROPERTY 310 (ROBERT MERGES & JANE GINSBURG eds., 2004).

¹⁹ *Eldred v. Ashcroft*, 537 U.S. 186, 219 (2003) (citing *Harper & Row*, 471 U.S. at 558).

²⁰ *Eldred v. Ashcroft*, 537 U.S. 186, 212, n. 18 (2003) (quoting *Mazer v. Stein*, 347 U.S. 201, 219 (1954)).

But copyright plays an additional role beyond merely encouraging production of works; it also facilitates diversity in creative output because authors are not beholden to their benefactors, which may otherwise exercise restrictive influence on the nature of, and viewpoints expressed in, the creative works of the authors.²¹ In contrast, the “marketable right” that copyright provides allows authors to express whatever viewpoint they deem fit. Neil Netanel thus suggests that copyright is “a state measure that uses market institutions to enhance the democratic character of civil society.”²²

Despite these purported advantages, copyright remains an imperfect solution, even in the estimation of those that first argued for copyright over patronage.²³ For instance, in granting a quasi-monopoly over creative works, copyright artificially restricts access to the goods and therefore raises the costs others must incur in order to obtain them.²⁴ Thus, while such rights may incentivize authors to engage in creative activity, they may also increase costs of access beyond what is required to provide the necessary incentives in the first place.

Furthermore, even if copyright facilitates the production of creative works, it may not facilitate an ideal level of diversity among those works. Copyright may thus share some of the same defects of which patronage is accused. For instance, the marketplace can provide for its own form of hegemony, with some noting that the market is “not notable for encouraging the variant and unpopular.”²⁵ The music and film industries in particular are often accused of only supporting more mainstream creative works for obvious commercial reasons, as discussed more fully below.²⁶ Sources of funding beyond copyright, including some forms of patronage, may thus be necessary in order to promote a greater diversity of viewpoints.²⁷

²¹ *Eldred v. Ashcroft*, 537 U.S. 186, 219 (2003) (citing *Harper & Row, Publishers, Inc. v. Nation Enters.*, 471 U.S. 539, 558 (1985)); Matthew Sag, *Copyright and Copy-Reliant Technology*, 103 Nw. U. L. Rev. 1607, 1675 (2009); Neil Weinstock Netanel, *Copyright and a Democratic Civil Society*, 106 YALE L.J. 283, 288 (1996).

²² Netanel, *supra* note 21, at 335.

²³ See Sir Thomas Babington Macaulay, Speech Delivered in the House of Commons (Feb. 5, 1841), in *FOUNDATIONS OF INTELLECTUAL PROPERTY* 310 (ROBERT MERGES & JANE GINSBURG eds., 2004) (indicating that copyright is the lesser of two evils, but, as a monopoly, still an evil).

²⁴ Guy A. Rub, *Contracting Around Copyright: The Uneasy Case for Unbundling of Rights in Creative Works*, 78 U. Chi. L. Rev. 257 (2011) (discussing the economic issue of deadweight loss that copyright law causes in general, and questioning in particular whether the ability to unbundle copyright rights via contract helps reduce that deadweight loss).

²⁵ Lloyd L. Weinreb, *Copyright for Functional Expression*, 111 HARV. L. REV. 1149, 1233-34 (1998).

²⁶ See Part X *infra*.

²⁷ Weinreb, *supra* note 25, at 1233-4.

But as reflected in the world's intellectual property law regimes,²⁸ copyright remains a preferred system to patronage for both encouraging production of and access to creative works and ensuring that a greater range of viewpoints is found in those works. By opening the door to economic independence, copyright purportedly frees creative output from the dependencies with which it was once shackled.

II. MARRYING COPYRIGHT AND PATRONAGE

But conceiving of copyright as a standalone economic system responsible for society's creative output neglects to take into account its ongoing dependencies. Indeed, the traditional dichotomy between copyright and patronage belies the reality of how copyright and certain forms of Technological Patronage intersect in the marketplace today. Rather than being alternative, independent forms of encouraging creative output, I argue that copyright and Technological Patronage are interdependent parts of a broader creative system. Indeed, as the world grows increasingly technological, this interdependence will only grow. And this growing interdependence suggests that characterizations pitting copyright and technology as adversaries are unhelpful to solving the issues that do arise in the dynamic between the two. Instead, conceiving of the two as interdependent parts in the same creative system reduces polarization while establishing a more useful framework through which to understand their relationship.

A. The Older Patrons

Forms of what might be called patronage have been prevalent as a complement to copyright for some time.²⁹ In the music industry, for instance, traditionally an artist's success has been heavily dependent on a record label's promotion and support of the artist.³⁰ Copyright, then, may provide the artist with an exploitable right that gives her a starting point, but support from the record label in many cases is also necessary. Similar models characterize other content industries as well.³¹

²⁸ U.S. Copyright Office, Circular 38A: International Copyright Relations of the United States 1 (2010) (reviewing the many international treaties that provide for some form of copyright protection, and to which most of the countries of the world have acceded).

²⁹ See David Nelson, *Free the Music: Rethinking the Role of Copyright in an Age of Digital Distribution*, 78 S. CAL. L. REV. 559, 565 (2005).

³⁰ Lital Helman, *Fair Trade Copyright*, 36 COLUM. J.L. & ARTS 157, 169-72 (2013) (reviewing the important role that record labels play in producing music).

³¹ See, e.g., Jared Wade, *On Location: The Risks of Movie Production*, ALL BUSINESS

Some suggest that this type of relationship is more accurately viewed as one of an investor rather than patron because, unlike traditional forms of patronage, record labels, publishing houses, and the like make substantial investments in the development, marketing, and commercial success of new artists and bear the vast majority of financial risk in the event of commercial failure.³² Indeed, typically record labels, book publishers, and others are assigned the copyright in the works and therefore become in effect the content owners.³³

But regardless of whether these intermediaries are best described as patrons or investors or some combination of both, many commentators nonetheless view their roles as negative in important respects.³⁴ For instance, some suggest that these intermediaries limit the diversification of creative works because they focus their promotional efforts only on authors or works that will appeal to broad audiences.³⁵ Furthermore, because these intermediaries often end up owning the copyright in the work through assignment from the author or otherwise have contractual arrangements dependent on selling as many copies of the creative works as possible, they spend a great deal of effort restricting access to the works in cases that may be legally ambiguous.³⁶

In short, though these types of intermediaries' investments in authors

(Dec. 1, 2004), <http://www.allbusiness.com/finance/insurance-risk-management/999145-1.html> (describing a similar financing model that exists in the movie industry); Lev Grossman, *Books Gone Wild: The Digital Age Reshapes Literature*, TIME (Jan. 21, 2009), <http://www.time.com/time/magazine/article/0,9171,1873122,00.html> (discussing a similar financing model in book publishing).

³² Brian Day, *In Defense of Copyright: Record Labels, Creativity, and the Future of Music*, 21 SETON HALL J. SPORTS & ENT. L. 61, 76 (2011).

³³ Helman, *supra* note 30, at 161 (citing authorities that indicate that the copyrights in sound recordings are typically owned by the record labels).

³⁴ See generally Helman, *supra* note 30 (highlighting significant issues arising from record labels' role in producing music, and arguing for a modified regime that would better compensate the artists themselves); Peter Lauria, *Infringement! Artists Say They Want Their Music Site Dough*, N.Y. POST, Feb. 27, 2008, available at http://www.nypost.com/seven/02272008/business/infringement_99428.htm; Alan McGee, *Recording Contract? Rip-Off You Mean*, GUARDIAN MUSIC BLOG, Oct. 25, 2007, http://blogs.guardian.co.uk/music/2007/10/alan_mcgee_thurs_pm_pic.html; Neala Johnson, *Q & A with Trent Reznor of Nine Inch Nails*, HERALD SUN, May 17, 2007, available at <http://www.news.com.au/heraldsun/story/0,21985,21741980-5006024,00.html>.

³⁵ See generally LAWRENCE LESSIG, *FREE CULTURE: HOW BIG MEDIA USES TECHNOLOGY AND THE LAW TO LOCK DOWN CULTURE AND CONTROL CREATIVITY* (2004); Helman, *supra* note 30, at 171-2 (describing homogeneity as an effect of record labels' involvement in the music industry); *Sleeping with the Enemy: Hollywood's Abusive Relationship with Race*, 1 GEO. J. L. & MOD. CRITICAL RACE PERSP. 41, 45-9 (2008) (describing continuing homogeneity in the roles that minorities play in Hollywood films).

³⁶ Lessig, *supra* note 35, 18-20.

and creative works may result in production of some creative works, their involvement may in the end actually reduce access as well as limit the range of works that the public consumes. In other words, this form of patronage appears to result in many of the traditional ills of patronage. Thus, rather than complementing copyright law in ways that have a net positive effect, these forms of patronage may instead in many cases suffocate copyright's potential in encouraging greater production of and access to a wider range of creative works.

B. The Barons of Technology

But a new set of intermediaries—what I call Technological Patrons—is increasingly encroaching on the turf of the old. Indeed, more and more consumers look to the technological platforms that Technological Patrons provide in order to find and access creative works. Most owners of creative works, therefore, can hardly avoid such platforms and still hope to reach the majority of consumers with their works. And as these technological platforms have firmly taken root, the production and provision of creative works has exploded, too. Thus, Technological Patronage is increasingly important and necessary to encouraging greater access to, and production and diversification of, creative works. And the commercial possibilities associated with producing and making available creative works are a major reason behind why Technological Patrons provide Technological Patronage in the first place.

Hence, rather than being competing or alternative models, Technological Patronage and copyright are increasingly interdependent in a broader creative system in bringing about copyright's purposes. And that interdependency also means that copyright plays a role in triggering innovative activity. The founding story behind copyright, in which copyright stars as an independent means by which to rescue culture from the vices of patronage, is thus no longer true today, if it ever were. Copyright is dependent in significant ways on technology, and vice-versa, and this will only become more so as the world grows even more technological in nature.

The following sections detail some of the more important categories of Technological Patronage and the ways in which copyright is increasingly interdependent with them in fostering greater creative and innovative activity and access to the fruits of that activity.

1. Technology Development Kits

The last decade has witnessed an explosion of devices and technological

platforms—mobile and otherwise—that provide the public with a variety of benefits. And one of the benefits that consumers increasingly expect is to be able to access the books they read, the music they love, the videos they enjoy, and other types of content on and through such technological platforms.

In order to facilitate such access, numerous technology companies provide the public with what are called software and hardware development kits (for purposes of this Article, “technology development kits” or “TDKs”).³⁷ Companies provide these TDKs to developers and other content creators in order to enable them to more readily create technology and other creative works that can then be accessed through the company’s or a partner’s technology platform. Access to the TDKs is typically free of charge, subject to certain licensing terms.

To illustrate: Amazon provides developers and other content creators a number of TDKs meant to enable them to more easily create apps, content, and other functionality for the Kindle e-book platform as well as Amazon’s line of mobile and other devices.³⁸ They also provide a TDK for those interested in creating and distributing apps through the Amazon Appstore for Android.³⁹ Similarly, Google provides a TDK for Android as well as its app store, Google Play, as does Apple for its App Store, iPhones, iPads, and various other hardware and software products.⁴⁰ Other technology companies provide TDKs for their lines of hardware and software products for similar reasons.

These technology companies clearly have their own interests in mind when providing this Technological Patronage to the public. For instance, the companies typically take a cut of whatever a third party receives from the consumer for apps or content sold through the companies’ technology platforms.⁴¹ And even when the apps or content are distributed free of charge, the companies have other interests in providing the Technological Patronage, such as increasing the overall attractiveness of its technology products and increasing ad revenue. But such commercial considerations simply suggest that copyright and the creative works that it helps generate

³⁷ See, e.g., <https://developer.apple.com/ipad/sdk/> (Apple’s iOS SDK); <http://developer.android.com/sdk/index.html> (Google’s Android SDK).

³⁸ See, e.g., <http://kdk.amazon.com/gp/public/gateway> (Amazon’s TDK for Kindle); <https://developer.amazon.com/appsandservices/solutions/devices/kindle-fire> (Amazon’s suite of development resources for Kindle Fire, Amazon Fire TV, and Fire Phone).

³⁹ See <https://developer.amazon.com/appsandservices/apis/>.

⁴⁰ See *supra* note 37.

⁴¹ Tristan Louis, *How Much Do Average Apps Make*, FORBES (Aug. 10, 2013, 5:30 PM EDT), <http://www.forbes.com/sites/tristanlouis/2013/08/10/how-much-do-average-apps-make/> (reviewing the amounts of revenue that many major technology companies receive through app sales on their various platforms).

are an important impetus to developing TDKs and the underlying platforms in the first place, thereby highlighting certain interdependencies between copyright and technological innovation.

And the overall effect of this form of Technological Patronage has been to increase production of and access to a broader range of creative works.⁴² The TDKs significantly reduce the amount of time that it would otherwise take developers to create their apps and other content, thereby increasing production of creative works.⁴³ Indeed, both the number of apps as well as the number of developers creating apps has exploded over time and appears poised to continue to expand rapidly.⁴⁴

Furthermore, Technological Patrons have traditionally been largely agnostic about what types of creative works third parties make available through their technology platforms, thereby encouraging a wide array of creative content representing a variety of viewpoints.⁴⁵ To the extent that creative works are deemed illegal or otherwise pose a serious public relations risk to the company, the company may cut off its patronage in such cases.⁴⁶ But overall, these companies have reasons to avoid discriminating against specific developers where they can avoid it.⁴⁷ Though there have been some well-documented instances of such discrimination, overall the record suggests ongoing access to this form of

⁴² Panos Papadopoulos, *Rise of the Mega SDK Vendors in Mobile*, VISION MOBILE (Jul. 2, 2013), <http://www.visionmobile.com/blog/2013/07/the-rise-of-the-mega-sdks-in-mobile/> (reviewing, among other things, the role that SDKs have played in facilitating creative activity by developers).

⁴³ *Id.*

⁴⁴ Chantal Tode, *Mobile App Market Continues Its Meteoric Rise: Report*, MOBILE MARKETER (Nov. 11, 2013), <http://www.mobilemarketer.com/cms/news/research/16568.html> (reviewing statistics on mobile app development that indicate rapid growth and predictions of further expansion).

⁴⁵ This is so despite the fact that companies typically retain, through their terms of service, near absolute discretion in their ability to remove content from their platforms.

⁴⁶ Austin Ruse, *Google Out of Porn Biz?* BREITBART (Jun. 6, 2014) <http://www.breitbart.com/Big-Journalism/2014/06/06/Breaking-Google-Out-of-Porn-Biz>; Matt Williams, *Apple Blocks 'Objectionable' App That Reports Deaths from US Drone Strikes*, The Guardian (Aug. 30, 2012, 16:40 PM EDT), <http://www.theguardian.com/technology/2012/aug/30/apple-blocks-us-drone-strike-app>.

⁴⁷ Indeed, Amazon.com for a time was even reluctant to pull from its marketplace a guide book for pedophiles, indicating that it “believes it is censorship not to sell certain books simply because we or others believe their message is objectionable.” Although it ultimately did remove the book in response to public outrage, its reluctance to do so and its statement provide one clear example of what seems to have become a norm for digital platforms: permissiveness. See Nick Saint, *Amazon Caves: Pedophile Guide Pulled from the Kindle Store*, SFGate (Nov. 11, 2010, 4:00 AM PST), <http://www.sfgate.com/news/article/Amazon-Caves-Pedophile-Guide-Pulled-From-The-2472372.php>.

Technological Patronage is more the norm than the exception.

Last, TDKs have also increased consumers' access to creative works by not only facilitating production of creative works, but enabling access to the works through the underlying technology platform. Indeed, the various storefronts that now exist for most major technology platforms make finding and accessing creative works relatively simple,⁴⁸ though digital searching remains an imperfect art.

Thus, copyright law and Technological Patronage in the form of TDKs have a largely symbiotic relationship within the broader creative system. Copyright provides content creators with a marketable right, thereby encouraging creative activity, which in turn encourages innovative activity on the part of Technological Patrons. The TDKs and associated technology platforms provide not only greater access to the creative works, but also tools with which to more readily create the content in which the marketable right subsists. Furthermore, this form of Technological Patronage results in access to a wider range of creative materials than copyright and its older set of intermediaries have traditionally been able or willing to produce.⁴⁹

2. Content Creation and Hosting Tools

In addition to TDKs, Technological Patrons provide the public with a host of other types of tools and services that (1) assist would-be authors in producing a wide range of creative works, and (2) promote public access to such works. This Article does not attempt to catalogue all of the tools and services that are available, but instead focuses on highlighting a representative few that illustrate some of copyright's more important technological interdependencies in the broader creative system.

YouTube, for instance, provides a variety of tools and services that aid users in creating and hosting content on its site.⁵⁰ Competitive video sharing websites do as well.⁵¹ And statistics suggest that such services have been

⁴⁸ *The Rise of Mobile Application Stores: Gateways to the World of Apps*, BOOZ & CO. (2010), available at http://www.strategyand.pwc.com/media/file/The_Rise_of_Mobile_Application_Stores.pdf (reviewing the rise of app stores).

⁴⁹ See, e.g., Floor64, *The Sky Is Rising!* TECHDIRT (Jan. 2012), available at <https://www.techdirt.com/skyisrising/> (reviewing the growth of content in absolute volume and suggesting that consumers have increasingly more content choices).

⁵⁰ See, e.g., *Working Together: An Overview of YouTube's Resources for Creators*, YOUTUBE, <https://www.youtube.com/yt/creators/creator-benefits.html> (last accessed Jul. 21, 2014).

⁵¹ *Create Something New*, Vimeo, <http://vimeo.com/create> (last accessed July 21, 2014) (providing an overview of the video creation tools that Vimeo, a competitive service to YouTube, offers).

immensely successful in both facilitating creation of content and promoting access thereto.

For instance, in terms of access, over one billion unique users visit YouTube each month in order to watch over six billion hours of video—nearly an hour for every person on Earth.⁵² A majority of teenagers today also obtain their music through YouTube.⁵³ Other sites also register significant traffic, though on a much smaller scale in comparison to YouTube.⁵⁴

In terms of content creation, users upload approximately 100 hours of video to YouTube every minute.⁵⁵ Other sites also experience significant activity.⁵⁶ Clearly Google's and others' technologies are not solely responsible for the creation of uploaded and viewed footage; the economic incentives associated with copyright undoubtedly play a role for many. But the technological tools that Google and others provide have certainly helped facilitate the creative activity and access thereto.

Technological Patrons such as Amazon, Apple, and others also provide a variety of tools for self-publishing books and other forms of literature. Amazon, for instance, provides services that allow authors to skip traditional publishing houses and produce and distribute literary works on demand.⁵⁷ Amazon and other companies involved in the e-Book world also provide authors with technological tools that facilitate production and distribution of electronic versions of their literary works, which have become increasingly vital in the digital age.⁵⁸

⁵² *Statistics*, YouTube, <http://www.youtube.com/yt/press/statistics.html> (last accessed July 21, 2014).

⁵³ Ben Richmond, *YouTube Is About to Do to Record Labels What Amazon Does to Publishers*, Motherboard (Jun. 17, 2014, 1:45 PM EST), http://motherboard.vice.com/en_us/read/youtube-is-about-to-do-to-record-labels-what-amazon-does-to-publishers (indicating that 64% of teenagers access music through YouTube, more than any other source).

⁵⁴ Eric Larson, *5 Reasons to Choose Vimeo Instead of YouTube*, Mashable (May 30, 2013), <http://mashable.com/2013/05/30/vimeo-over-youtube> (indicating that roughly 70 million unique users visit Vimeo each month).

⁵⁵ *Statistics*, YouTube, <http://www.youtube.com/yt/press/statistics.html> (last accessed July 21, 2014).

⁵⁶ Sam Gutelle, *Vimeo Users Streamed 4.9 Billion Videos In 2013*, TUBEFILTER (Jan. 27, 2014), <http://www.tubefilter.com/2014/01/27/vimeo-5-billion-views-2013-timeline/>.

⁵⁷ See, e.g., *CreateSpace*, https://wwwcreatespace.com/pub/l/diy.do?ref=1383688&utm_id=6072&cp=70170000000c3cK&ls=Amazon&sls=Amazon_Selfpub (last accessed July 21, 2014) (providing an overview of Amazon's suite of technologies and services for self-publishing literary works).

⁵⁸ See, e.g., *Kindle Direct Publishing*, <http://www.amazonkdp.com> (last accessed July 21, 2014) (providing an overview of Amazon's self-publishing tools for its Kindle e-Reader technologies).

Such tools and services have thus helped spawn diverse creative activity and enhanced access thereto in a way that, copyright, on its own, could not. Indeed, some accounts suggest that today's world generates in days the same amount of content that, previous to 2003, was generated in the history of the world total.⁵⁹ Other accounts indicate that not only does more content exist, but more people are earning money from that content than ever before, and consumers spend an ever increasing amount of their disposable income on consuming the available content.⁶⁰ And tools and services such as those described above play a vital role in bringing about these results.⁶¹

Copyright, of course, still remains important as part of the broader creative system. Copyright provides prospective authors with a marketable, enforceable set of rights that must be taken seriously by both the Technological Patrons as well as consumers. Furthermore, copyright's interdependence with Technological Patronage means that copyright plays a significant role in spurring innovative activity. Indeed, a basic incentive for developing such technologies in the first place is the institution of copyright and the commercial possibilities that copyrighted creative works, in conjunction with the technologies, present. And to such ends, Technological Patronage in today's world expands copyright's capacities by enabling more parties to create more creative works that are then accessible to a broader audience.

3. Technological Money

In addition to providing technological tools and platforms for third parties to create and showcase their works, in some cases Technological Patrons also simply subsidize consumer access to creative works on their technology platforms. For instance, members of the Amazon Prime program—which requires a nominal \$99 per year fee—obtain free (to them) access to a large number of creative works through Amazon Instant Video and the Kindle e-Book platforms.⁶² In order to provide this free access, Amazon almost undoubtedly pays content owners in some form on behalf of consumers. In so doing, Amazon and other companies thus patronize content owners—and thereby encourage increased production and access to creative works—in order to provide their customers with enhanced

⁵⁹ Brett King, *Too Much Content: A World of Exponential Information Growth*, HUFFINGTON POST TECH (Jan. 18, 2011), http://www.huffingtonpost.com/brett-king/too-much-content-a-world-_b_809677.html.

⁶⁰ Floor64, *The Sky Is Rising!* TECHDIRT (Jan. 2012), available at <https://www.techdirt.com/skyisrising/>.

⁶¹ *Id.*

⁶² The nominal fee charged for the program does not even begin to cover the costs that consumers would otherwise incur in accessing what is available through the program.

technological products and services.

Other examples of such subsidization include Apple's iTunes Match program which, like Amazon Prime, requires a nominal fee to participate.⁶³ This program allows users to store in the cloud and access from anywhere any music that they have, including music not purchased through Apple.⁶⁴ In order to be able to provide consumers with this type of access, Apple almost undoubtedly struck some type of commercial agreement with record labels.⁶⁵ Netflix and Amazon's funding of original films and TV series in order to attract consumers to their technological platforms are yet other example of such subsidization.⁶⁶

Hence, in some cases Technological Patrons engage in a more traditional form of patronage by directly subsidizing the creation and distribution of creative works, all on behalf of their customers. Nonetheless, copyright and technology's interdependencies are still clear in such cases. The Technological Patrons provide the subsidy in order to increase the lure of their own technological products. The creation and promotion of these technological products thus directly leads to the creation and promotion of creative works. And the commercial prospects associated with copyrighted creative works makes creating and promoting such technological products worthwhile in the first place. Thus, while Technological Patrons clearly have their own commercial purposes in mind, technological innovation and copyright complement each other in such cases (1) as part of the broader creative system in bringing about increased production of and access to a more diverse set of creative works; and (2) in facilitating innovative activity.

4. Free and Open Source Software

Another significant form of Technological Patronage provided in the software world consists of the free and open source software (FOSS)

⁶³ See *iTunes Match*, <https://www.apple.com/itunes/itunes-match/> (last accessed July 22, 2014) (providing an overview of the program)

⁶⁴ *Id.*

⁶⁵ Again, the nominal fee to participate in no way would cover the amounts that would otherwise be due record labels for the copies stored and streamed from the cloud.

⁶⁶ See, e.g., Emily Steel, *Netflix Bolsters Offerings in Documentary Genre*, N.Y. TIMES (July 28, 2014), http://www.nytimes.com/2014/07/28/business/media/netflix-bolsters-offerings-in-documentary-genre.html?_r=0 (discussing Netflix's plans to contribute an additional \$3 billion dollars to developing original content in order to lure subscribers to its services); Mark Sullivan, *Amazon Will Spend \$100M on New, Original Shows in Q3*, VENTURE BEAT (July 24, 2014 4:00 PM), <http://venturebeat.com/2014/07/24/amazon-will-spend-100m-on-new-original-shows-in-q3/> (discussing Amazon's significant financial commitments to developing original content for its technological platform).

movement. In short, FOSS is software provided under a variety of license terms whose most critical condition is that the software comes with access to the source code—or human readable—version of the software.⁶⁷ Source code is incredibly valuable because it is essentially the detailed blueprint of how the software works, and subsequent software engineers possessing it can more easily make alterations and additions to the software program in order to improve upon it.⁶⁸

The FOSS movement has been exceptionally successful,⁶⁹ so much so that some claim that the open nature of the FOSS development model is now the norm in the software world.⁷⁰ Vast numbers of FOSS programs are available under permissive license terms to anyone desiring access to the technology. Indeed, some of the most popular software technologies in the world, including Android, Firefox, and Linux, are FOSS. And, again, this access is not subject to a licensing fee, as is the case with more traditional forms of proprietary software.

Companies and other entities have a variety of reasons for providing this form of Technological Patronage. Some provide it for commercial reasons.⁷¹ Indeed, many successful businesses have been built around FOSS; Red Hat is an example of a billion dollar company that largely sells services related to a FOSS product, the Linux operating system in its case. Others provide the patronage for non-economic reasons, including for prestige enhancement or simply out of the love of creativity.⁷²

Copyright law has played and continues to play an important role in facilitating this Technological Patronage. Indeed, access to FOSS is provided through copyright licenses. The founders of the FOSS movement used copyright to promote their vision of free access by creating copyright licenses that sought to turn copyright on its head.⁷³ That is, some of the most important FOSS licenses require that, as a condition of use, any subsequent works that use or incorporate the FOSS be subject to the same

⁶⁷ See Clark D. Asay, *A Case for the Public Domain*, 74 OHIO ST. L.J. 753, 759 (2013).

⁶⁸ James A.J. Wilson, *Benefits of Open Source Code*, OSS WATCH (May 9, 2013), <http://oss-watch.ac.uk/resources/whoneedssource>.

⁶⁹ See Clark D. Asay, *Enabling Patentless Innovation*, 74 MD. L. REV. 12 (2015) (forthcoming), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2289326.

⁷⁰ Katherine Noyes, *Open Source Software Is Now a Norm in Businesses*, PCWORLD (May 18, 2011, 10:07 AM), http://www.pcworld.com/article/228136/open_source_software_now_a_norm_in_businesses.html (citing to a report that indicates that open source software has gone “mainstream” in the business world).

⁷¹ Asay, *supra* note 67, at 762-5.

⁷² *Id.*

⁷³ Eben Moglen, *Anarchism Triumphant: Free Software and the Death of Copyright* 4 (FIRST MONDAY 22 (June 28, 1999), available at <http://emoglen.law.columbia.edu/publications/anarchism.pdf>).

permissive licensing terms.⁷⁴ Other licenses simply license the FOSS to anyone wanting access to it. In both cases, however, the basis of the licenses is copyright.⁷⁵

Hence, the Technological Patronage provided through the FOSS movement has depended critically on copyright. While I have argued elsewhere that copyright may not be as crucial to the success of the movement going forward as traditional accounts suggest, at least early on the movement probably could not have survived without copyright as a basis for the licensing scheme.⁷⁶ Accordingly, copyright law and the FOSS movement's Technological Patronage have been interdependent complements to each other in yielding enhanced creativity and innovation in the software world.

The FOSS movement facilitates this enhanced creativity and innovation in a number of ways. First, the FOSS movement increases *access* to creative and innovative software works. Indeed, one of the primary purposes of the movement is to permit access to the source code to anyone wanting it. And a variety of readily accessible platforms exist that make locating and obtaining FOSS relatively simple.⁷⁷ Almost by definition, then, the FOSS movement promotes greater access to creative and innovative software works.

This access increases the production of additional creative and innovative output. For instance, the extensive number of freely available FOSS projects allows developers to skip recreating the wheel and more easily build upon what already exists.⁷⁸ In other words, subsequent developers can focus on improving upon and adding to the underlying works rather than having to first build them themselves.⁷⁹ And this freed-up development time results in increased production of software content.

It also facilitates a greater diversity of works in the software realm, because each developer can access the wealth of freely available FOSS projects and move in whatever new direction they deem fit. Naturally the market plays a role in steering developers away from a diversity that the

⁷⁴ Asay, *supra* note 67, at 759-61.

⁷⁵ *Id.*

⁷⁶ See generally Asay, *supra* note 67.

⁷⁷ See, e.g., *Comparison of Open-Source Software Hosting Facilities*, WIKIPEDIA, http://en.wikipedia.org/wiki/Comparison_of_open-source_software_hosting_facilities (last visited July 22, 2014).

⁷⁸ Howard Baldwin, *4 Reasons Companies Say Yes to Open Source*, COMPUTERWORLD (Jan. 6, 2014, 6:30 AM ET), http://www.computerworld.com/s/article/9244898/4_reasons_companies_say_yes_to_open_source?taxonomyId=11&pageNumber=1 (suggesting that a primary reason that parties use FOSS is the cost savings of not having to recreate the software works themselves).

⁷⁹ *Id.*

market will not support. But overall, diversity of software goods still likely increases, even when a dominant software product develops.

Take Linux, for instance.⁸⁰ This famous FOSS project now powers much of the computing world. Numerous parties have created a number of versions of Linux for a variety of computing environments, from embedded devices, to desktops, to phones, to cars.⁸¹ Access to the underlying work has allowed for increased production of creative works as well as a diversification of them. Some might argue that this access has actually resulted in hegemony because Linux is now so dominant in so many areas of software that other creative options are foreclosed. But that is true only insofar as the many variants of Linux are the same product, which is not the case.⁸²

In sum, the FOSS movement is another example of copyright law and Technological Patronage complementing each other in ways that yield increased production of and access to a more diverse set of creative and innovative works. The software industry increasingly depends on FOSS in order to spur innovation and creativity, and the FOSS movement remains dependent on copyright in order to promote its vision. Indeed, because of the FOSS movement's success, some have advocated mimicking its tenets in other sectors in hopes of achieving similar results.⁸³

⁸⁰ Google's Android FOSS project is yet another example. Google supports and maintains the official version of Android that is used on many smartphones and tablets. But Amazon and others have created their own branches of Android for their technology products. And they haven't simply copied Google's Android, but instead have altered it significantly in order to match their needs and provide a different experience to their users. Thus, access to the underlying works allows not only for use thereof, but production of a more diverse set of works as well. See Ewan Spence, *Why Has Amazon Risked Distraction By Releasing The Fire Smartphone?*, FORBES (July 7, 2014, 8:25 PM), <http://www.forbes.com/sites/ewanspence/2014/07/07/why-has-amazon-risked-distraction-by-releasing-the-fire-smartphone/> (summarizing how Amazon has used a differentiated version of Android for its own devices).

⁸¹ Graham Morrison, *The Hidden Places Where Linux Dominates*, TECHRADAR (Jan. 29, 2011), <http://www.techradar.com/us/news/computing/the-hidden-places-where-linux-dominates-923626>; Christopher Tozzi, *Automotive Grade Linux Released for Open Source Cars*, THE VAR GUY (July 1, 2014), <http://thevarguy.com/open-source-application-software-companies/070114/automotive-grade-linux-released-open-source-cars>.

⁸² See, e.g., Steven J. Vaughan-Nichols, *The 5 Most Popular Linux Distributions*, ZDNET (Aug. 26, 2012, 15:55 PDT), <http://www.zdnet.com/the-5-most-popular-linux-distributions-7000003183/> (discussing five of the most popular Linux distributions just for desktops).

⁸³ See, e.g., M. Ryan Calo, *Open Robotics*, 70 MD. L. REV. 571, 582–83, 611 (2011) (arguing that an open model of innovation in the field of personal robotics is necessary in order for the field to reach its potential). See generally John R. Ackermann, *Toward Open Source Hardware*, 34 U. DAYTON L. REV. 183, 183–85 (2009) (discussing efforts to apply open license principles to hardware development generally).

5. Some Possible Technological Warts

The relationship between the types of Technological Patronage reviewed and copyright includes some possible deficiencies that are worth mentioning at this point. While in my view none of these is detrimental to the arguments of this Article, they are noted both in order to provide some counterarguments as well as to better illustrate the boundaries of my Article's arguments.

First, some argue that the types of Technological Patronage reviewed above have facilitated the creation of and access to too much content.⁸⁴ In other words, while the copious amounts of available content may seem like a boon, in reality consumers suffer as they are forced to sift through excessive amounts of content in search of a limited number of worthwhile creative works.⁸⁵

While such concerns may have some merit—particularly if the overall quality of content available suffers at the expense of increased quantity—it is hard to grant such concerns too much deference. First, the complaint itself suggests that copyright, in conjunction with Technological Patronage, is working as intended in promoting “the progress of the arts” by facilitating increased production of and access to creative works. It therefore, if anything, confirms the interdependencies between the two in the broader creative system.

Second, if consumer expenditures on creative works are any indication of favorable quality, it appears that consumers are finding and purchasing more quality content than ever before.⁸⁶ And this remains true even if the majority of expenditures focus on a limited set of creative works, since interdependence between copyright and Technological Patronage in promoting copyright's purposes would not appear to mandate that all works are created commercially equal.

The more challenging critiques of the types of Technological Patronage that I have outlined above is that they actually undermine copyright by 1) facilitating copyright infringement, and 2) undermining creative persons'

⁸⁴ See, e.g., Dougald Hine, *What Good Is Information*, AEON MAGAZINE (Mar. 6, 2014), <http://aeon.co/magazine/living-together/the-problem-with-too-much-information/> (arguing that the flood of content that is now available can contribute to a lack of meaning in life).

⁸⁵ See, e.g., Paul Barclay, *The Myth of the Long Tail*, Big Ideas (Feb. 22, 2014, 6:00 AM), <http://www.abc.net.au/radionational/programs/bigideas/the-myth-of-the-long-tail/5275658> (reviewing the conclusions of a study by Harvard Business School Professor Anita Elberse in which she found that, while more content exists today, consumers generally still focus on a small number of creative works).

⁸⁶ See *supra* note 60.

ability to earn a living. If these two related points are true, than Technological Patronage may ultimately do more harm than good by disincentivizing creative persons from engaging in creative activity. Rather than being productively interdependent, therefore, copyright and Technological Patronage may be at odds, as some commentators suggest. These are complex, interrelated issues, and it is beyond the scope of this to address them completely. But I will briefly touch upon both concerns in order to better illustrate the arguments of this Article.

Concerns about technological advancements undermining creative persons' ability to earn a living have been prevalent for some time. Some argue, for instance, that music-streaming services like Spotify and Pandora pay artists so little that many otherwise talented artists are opting out of the industry entirely.⁸⁷ Similar complaints have been lobbied against Amazon's effect on the book industry.⁸⁸ Indeed, others argue more generally that a culture of free or cheap content has mainly enriched Technological Patrons while impoverishing the middle classes of creators.⁸⁹ These complaints have a common theme: if Technological Patronage continues to devalue content, then those currently producing it will eventually cease to do so.

A few responses are worth mentioning. First, this Article argues that copyright and Technological Patronage are interdependent in facilitating enhanced creative activity and access thereto; an important implication of that argument is that copyright remains a significant part of the equation, even if not the only part. Hence, copyright remains vital in giving creative parties the ability to police their works and prevent piracy thereof, thereby preserving value.

As such, legacy business models, rather than Technological Patronage, may be the cause of some of the purported devaluing of content. For instance, in the music industry, artists have long assigned their copyrights to record labels in order to obtain their promotional support. But in giving up these rights, artists lose the ability to control their creative works' fates. With such rights, record labels may act in their own commercial interests, while neglecting those of individual artists, in striking deals with Technological Patrons that allow for the musical works to be streamed.

Such instances of devaluation may thus be more the result of defects in

⁸⁷ Scott Timberg, *It's Not Just David Byrne and Radiohead: Spotify, Pandora and How Streaming Music Kills Jazz and Classical*, SALON (Jul. 20, 2014, 2:00 PM MDT), http://www.salon.com/2014/07/20/its_not_just_david_byrne_and_radiohead_spotify_pandora_and_how_streaming_music_kills_jazz_and_classical/.

⁸⁸ Tim Waterstone, *Amazon Is Discounting Us to Death*, THE GUARDIAN (Apr. 6, 2012, 1:00 PM EDT), <http://www.theguardian.com/commentisfree/2012/apr/06/amazon-destroy-britain-book-industry>.

⁸⁹ See ASTRA TAYLOR, *THE PEOPLE'S PLATFORM: TAKING BACK POWER AND CULTURE IN THE DIGITAL AGE* (Fourth Estate 2014).

legacy business models becoming amplified in the digital economy than inherent defects in the digital economy itself. Furthermore, such scenarios illustrate that copyright remains a valuable set of rights, but one that must be smartly utilized in order to preserve productive interdependencies between copyright and Technological Patronage. In other words, the dependencies between copyright and Technological Patronage are not infallible, even if they do exist.

Third, some instances of devaluation may be the result of scenarios where a Technological Patron wields too much power in a given field. In other words, such instances are problems of market concentration rather than deficient rights under copyright or inherent problems with technology itself. In such cases, as I will argue later, antitrust law is probably the correct solution to helping maintain a competitive landscape.

Related to the concern that Technological Patronage tends to devalue content, many claim that Technological Patronage actually undermines copyright by facilitating copyright infringement. That is, since services such as YouTube facilitate creation and distribution of content, potential infringers similarly have an easier time using the service to create and host infringing content. As a result, creative parties lose needed revenues, the content itself is devalued in the eyes of the consuming public, and creative parties opt out of the creative system altogether.

Furthermore, aspects of the Digital Millennium Copyright Act (“DMCA”) may exacerbate such problems. By providing services such as YouTube a broad safe harbor against secondary copyright liability for hosting infringing materials so long as certain conditions are met, the DMCA may make it even more likely that such services undermine the ability of copyright owners to obtain the necessary monetary awards for creating works. In this view, this type of Technological Patronage is no patronage at all, but instead deals copyright a significant blow in its ability to encourage production of a diverse set of creative works.

But such arguments do not hold up to scrutiny. First, as discussed above, this type of Technological Patronage leads to creation of and access to works that otherwise would neither exist nor be available. In other words, this form of Technological Patronage has helped create access to creative works that copyright law, on its own, could or did not. So for a whole category of content creators, this form of Technological Patronage helps yield significant numbers of works, and copyright law ensures that, once created, these creators have a marketable set of rights should they wish to exploit them. In this light, copyright and Technological Patronage’s interdependencies are not only clear, but also productive.

Second, many content owners that may not need the Technological Patronage in order to create their works still benefit from it by obtaining a

greater audience for their works. Indeed, most major studios and content providers have some sort of presence on YouTube and other such services.⁹⁰ So while digital services such as YouTube may have made copyright infringement easier to commit, one logical corollary to increased access to creative content is enhanced abilities to monetize it, thereby further highlighting the interdependencies of the two.

And third, though such services may make copyright infringement easier to commit, to some extent the DMCA helps counterbalance that concern. For instance, such services are not eligible for the safe harbor under the DMCA unless the service owners expeditiously remove allegedly infringing content once notified by the content owner.⁹¹ The safe harbor is so valuable to companies that, in most cases, the service provider will simply remove materials from their site upon receiving a notification, even in cases where the notification may not actually be justified.⁹² Furthermore, though services such as YouTube have no clear legal obligation to actively monitor their sites for infringing material, some have implemented technologies to detect and ferret out clear cases of infringement.⁹³

In sum, though services such as YouTube certainly result in some copyright infringement, this type of Technological Patronage appears to aid copyright law in facilitating increased production of and access to a wider variety of creative content, which in turn increases monetization opportunities. Furthermore, despite the threat of copyright infringement, the DMCA as currently implemented provides copyright owners with tools with which to help combat it. And last, services such as YouTube have actively implemented tools to help identify and prevent instances of copyright infringement. This is not to claim that copyright and technology's interdependencies are always in perfect harmony, but it is to say that the current system provides some tools that help maintain a productive relationship between the two.

6. Conclusion

The foregoing discussion highlights several important ways in which

⁹⁰ Edward Lee, *Warming Up to User-Generated Content*, 2008 U. ILL. L. REV. 1459 (2008) (discussing generally major content owners' growing partnerships with sites such as YouTube).

⁹¹ 17 U.S. Code § 512(c)(1)(C).

⁹² Alfred C. Yen, *Internet Service Provider Liability For Subscriber Copyright Infringement, Enterprise Liability, and the First Amendment*, 88 GEO. L.J. 1833, 1883 (2000).

⁹³ Bryan E. Arsham, *Monetizing Infringement: A New Legal Regime for Hosts of User-Generated Content*, 101 GEO. L.J. 775, 791-2 (2013) (discussing YouTube's self-imposed implementation of copyright infringement monitoring technologies).

Technological Patronage is interdependent with copyright in yielding increased production of and access to a greater diversity of creative works. The complementary nature of the two stands in contrast to traditional accounts of the relationship between patronage and copyright. Copyright and content owners today depend critically on Technological Patrons in order to succeed in the marketplace. And Technological Patrons depend critically on content owners for the success of their own technology products as well. While content owners have long feared the effects of technology in eroding their business models by facilitating piracy, the reality has become that content owners are increasingly beholden to the copious amounts of Technological Patronage that they today receive. And, overall, these interdependencies appear to serve the interests of copyright and technological innovation alike.

III. TECHNOLOGICAL PATRONS' ROLE IN SOLVING COPYRIGHT DILEMMAS

So far this Article has explored several examples of where Technological Patronage is interdependent with copyright in yielding increased production of and access to a diverse set of creative works and technological products.

Part III turns to the role that Technological Patrons play in helping solve some of copyright's most pressing legal issues. This role is natural given the interrelationship between the Patrons' technological products and various forms of content and, thus, further highlights the interdependence between Technological Patronage and copyright in facilitating creative and innovative activity.

A. The First-Sale Doctrine's Digital Dilemma

The Copyright Act generally grants copyright owners five exclusive rights in their works: the right to reproduce, distribute, prepare derivative works of, publicly display, and publicly perform the work.⁹⁴ But despite commentators at times referring to copyright as a monopoly on the basis of these rights,⁹⁵ a number of exceptions to these rights render this verdict inaccurate. One of the more important such exceptions is the first-sale doctrine.

This exception, which originally developed in common law but is now enshrined in the Copyright Act, dictates that once a copyright owner has

⁹⁴ 17 U.S. Code § 106.

⁹⁵ See, e.g., Jessica C. Tones, *Copyright Monopoly vs. Public Access—Why the Law Should Not Be in Private Hands*, 55 SYRACUSE L. REV. 371 (2005) (referring to copyright as a monopoly).

made an authorized first sale of a copy of a copyrighted work, the owner of that copy has the right to further dispose of the copy without having to obtain authorization from the copyright owner.⁹⁶ This exception is necessary because, otherwise, the owner of a copy of a book would violate the author's distribution right when giving away that copy to another.⁹⁷ The first-sale doctrine thus enables things such as used bookstores, libraries, and many other important secondary markets for copyrighted works.⁹⁸

The first-sale doctrine, furthermore, has recently received a boost at the Supreme Court level. In the recent *Kirtsaeng* opinion, the Court ruled that the first-sale doctrine includes no geographic limitations.⁹⁹ In other words, even if a copyrighted work was originally produced and distributed outside the United States, so long as the copyright owner authorized the first distribution of that copy of the work, the recipient of the work can then dispose of it as she wishes, including importing the work into the United States.¹⁰⁰ Some suggest that this ruling will harm copyright owners, whose ability to geographically price discriminate will be significantly curtailed as a result.¹⁰¹ Be that as it may, the *Kirtsaeng* decision helped cement the first-sale doctrine as an important exception to the exclusive rights that the Copyright Act grants copyright holders.

But as more and more content has entered the digital realm, application of the first-sale doctrine has become less certain. This is so because a number of circuit courts have interpreted the Copyright Act to allow for evasion of the first-sale doctrine when copyright owners label the sale of copies of their works as a "license" to the work.¹⁰² In such cases, the first-sale doctrine does not apply, according to these courts, since the doctrine only applies when someone "owns" a copy of a copyrighted work.¹⁰³ In some circuits digital content owners are thus able to eliminate the first-sale doctrine through careful structuring of their agreements with consumers.

⁹⁶ See 17 U.S. Code § 109. See generally Aaron Perzanowski & Jason Schultz, *Digital Exhaustion*, 58 UCLA L. REV. 889, 908-12 (2011) (providing a general overview of the history of the first-sale doctrine).

⁹⁷ See Clark D. Asay, *Kirtsaeng and the First-Sale Doctrine's Digital Problem*, 66 STAN. L. REV. ONLINE 17 (2013).

⁹⁸ *Id.*

⁹⁹ *Kirtsaeng v. John Wiley & Sons, Inc.*, 133 S. Ct. 1351 (2013).

¹⁰⁰ *Id.*

¹⁰¹ Guy A. Rub, *Rebalancing Copyright Exhaustion*, EMORY L.J. __ (2015) (forthcoming) (arguing that copyright owners should be able to prevent importation of copyrighted works in order to enable effective price discrimination).

¹⁰² See, e.g., *Vernor v. Autodesk, Inc.*, 621 F.3d 1102, 1103-04 (9th Cir. 2010). For an overview of the variety of approaches courts have taken to making this determination, see Brian W. Carver, *Why License Agreements Do Not Control Copy Ownership: First Sales and Essential Copies*, 25 BERKELEY TECH. L.J. 1887 (2010).

¹⁰³ Carver, *supra* note 102.

As such, the first-sale doctrine faces a digital dilemma. Some may believe that it faces no such dilemma because, for instance, the infinitely reproducible nature of digital works means that applying the doctrine in the digital context will completely undermine the ability of copyright owners to commercialize their works; after all, physical products have limited lifespans, so even with secondary markets for physical products, somewhat frequent sales of new products are necessary to replenish those markets. With digital products, however, no such necessity exists, and therefore, content owners will presumably lose significant numbers of sales for their works should a digital first-sale right exist.

These concerns certainly have merit, but as I've said elsewhere, they are not a justification for eliminating the first-sale doctrine in the digital context altogether.¹⁰⁴ Rather, if anything, these concerns are justification for making adjustments to the first-sale doctrine in the digital context.¹⁰⁵ Of course, some may believe that the first-sale doctrine is currently too broad, whether applied to physical or digital products. But again, even if the doctrine is currently too broad, that is not a justification for eliminating the doctrine in the digital space, but rather, for limiting the doctrine in its application to both the physical and digital spheres.

So what's the solution? For political economy reasons, Congress seems unlikely to amend the Copyright Act to explicitly mandate that the first-sale doctrine applies in the digital context. And until it does so, courts are stuck with the current language of the Copyright Act, a reasonable interpretation of which allows for easy evasion of the first-sale doctrine, as described above.

Technological Patrons, on the other hand, may be better situated than others to ensure that the first-sale doctrine survives the digitization of content. Because Technological Patrons provide content owners with increasingly essential technological platforms through which consumers access creative works, these Technological Patrons have significant leverage vis-à-vis even the biggest of content owners. Indeed, these Patrons have in the past shown the ability to secure enhanced permissions for and access to content that content owners, on their own, may have been reluctant to grant and which copyright law, as currently interpreted, does not mandate.¹⁰⁶

¹⁰⁴ Asay, *supra* note 97.

¹⁰⁵ *Id.*

¹⁰⁶ For instance, in the digital music sphere, early on Apple was able to convince major record labels to make their works available on and through Apple's hardware and software products, subject only to a lightweight digital rights management ("DRM") technology that is relatively simple to bypass. Amazon followed suit by convincing the labels to make their music titles available via Amazon without DRM at all. Apple, Amazon, Google and others have also struck deals with the major music publishers to allow for cloud-based streaming

Furthermore, some of the biggest concerns with a digital right of first sale may be most readily solved in the context of a contractual relationship between Technological Patrons and content owners. For instance, as mentioned, some of the primary concerns with a digital first sale right are that, unlike physical products, digital copies do not degrade over time and thus can be replicated in perfect condition and transferred an infinite number of times.¹⁰⁷

Consequently, some may worry that consumers would abuse a digital first-sale right by transferring copies of works to others while retaining copies for themselves.¹⁰⁸ Furthermore, even assuming the original possessors of the copies did not retain them, the transferred copy remains in perfect condition, therefore enabling an infinite number of future transfers.¹⁰⁹ Consequently, a digital right of first sale may very well weaken the marketable right of content owners as they compete against pirated or infinitely transferrable copies of their own works.¹¹⁰

The contractual terms and conditions between Technological Patrons and content owners could help address these concerns. Furthermore, while some instances of piracy will occur no matter what solutions are adopted, technological solutions for allowing transfers of works while ensuring that the transferor does not retain a copy can be built and, indeed, already exist.

The following sections describe several examples in which Technological Patrons have helped or may help facilitate application of the first-sale doctrine in the digital sphere. Of course, the opposite possibility also exists, and Part IV *infra* discusses the role of antitrust law in ensuring that Technological Patrons do not become an obstacle rather than a conduit to production of and access to creative content.

1. E-Book Lending

As the largest book and e-book distributor in the world, Amazon holds significant sway in the world of commercial literature.¹¹¹ Other notable

and storage of music; Amazon even permitted this functionality before getting explicit agreement from the content owners. We take much of this for granted now, but without the involvement of these companies, it is unlikely that this type of access would be available today.

¹⁰⁷ See Jonathan C. Tobin, *Licensing as a Means of Providing Affordability and Accessibility in Digital Markets: Alternatives to a Digital First Sale Doctrine*, 93 J. PAT. & TRADEMARK OFF. SOC'Y 167, 177-84 (2011) (discussing generally problems associated with a digital first-sale right).

¹⁰⁸ *Id.*

¹⁰⁹ *Id.*

¹¹⁰ *Id.*

¹¹¹ Such power was manifest in the e-book sphere in 2010 and earlier, when Amazon

online e-Book retailers include Barnes & Noble, Apple, Google, and Sony.¹¹² Because content owners increasingly depend on these companies for providing access to their creative content, these Technological Patrons have been able to offer their consumers certain rights that, while not the same as a digital first-sale right, nonetheless approximate it in certain respects.

For instance, both Amazon and Barnes & Noble offer book-lending functionality through their products, meaning that certain e-book titles are eligible to be transferred to others for their use. For Amazon customers, the lending period is currently only fourteen days, and any such title may be lent only one time.¹¹³ Lending terms for Barnes & Noble customers are similar.¹¹⁴

Thus, despite Amazon, Barnes & Noble, and the publishers labeling consumers' access to e-book titles as a license rather than a transfer of ownership to a copy of the work—and thereby eliminating the absolute application of the first-sale doctrine—Amazon and Barnes & Noble have worked with publishers to grant consumers some quasi first-sale rights. Admittedly, this lending right as currently constituted is not nearly as broad as an absolute first-sale right, but it is more than what the content owners might otherwise offer.

These Technological Patrons have also helped enable another important secondary market that the first-sale doctrine in the physical world permits: libraries. Amazon, Barnes & Noble, and others have worked together with thousands of public libraries across the United States to enable e-book lending from public libraries.¹¹⁵ The number of titles available in this

was able to sign agreements with most of the major publishing houses that allowed Amazon to set the retail price of the e-books. That meant that, though the publishing houses sold books to Amazon at whatever wholesale price the parties agreed to, Amazon could sell the book to consumers at a lower price, which it did in many cases. Publishers disliked this because, in their view, it tended to lessen the value of books in the minds of the consuming public. But Amazon preferred it for a variety of reasons, in part at least because the company was thereby able to get consumers hooked into their digital ecosystem. And given Amazon's significant market share, there was little the publishers could do until another behemoth entered the fray, which Apple did in 2011, only to be accused itself by the Department of Justice of antitrust violations for colluding with the publishers to set e-book prices.

¹¹² *eBook Retailers*, EBOOK ARCHITECTS, <http://ebookarchitects.com/learn-about-ebooks/retailers/> (last visited July 30, 2014).

¹¹³ *See Lend or Borrow Kindle Books*, http://www.amazon.com/gp/help/customer/display.html/ref=hp_rel_topic?ie=UTF8&nodeId=200549320 (last visited July 30, 2014).

¹¹⁴ *See How Do I Lend and Borrow a Book*, <http://bookclubs.barnesandnoble.com/t5/NOOK-First-Edition-Technical/How-do-I-lend-and-borrow-a-book/td-p/552254> (last visited July 30, 2014).

¹¹⁵ *Borrow Books from a Public Library*,

format from any given library differs significantly, and some libraries do not yet provide for e-book lending at all.¹¹⁶ Nonetheless, despite these limitations, that such lending exists, despite a digital first-sale right being absent, is further evidence of the influence these Technological Patrons exert in altering content owners' behavior.

Of course, such influence has its limits. Technological Patrons have not yet been able to secure an absolute first-sale right for their customers, and it may not be in their interest to do so. After all, they, too, lose profit when titles are repeatedly transferred among customers without payment. Thus, thoughm Technological Patrons may have been effective in bringing about through private ordering what politics renders nearly impossible, their own commercial interests may stand in the way of securing a broader set of rights.

Furthermore, for a Technological Patron to be in the position to force such concessions from content owners, the Technological Patron may need to be in such a dominant position that an antitrust violation is likely. Put differently, the type of leverage necessary to force an absolute digital first-sale right may, if achieved, also mean that such activity is less likely, since the Technological Patron may be more likely to abuse its dominant position in the opposite direction. Part IV turns to these and related questions.

2. Shared Accounts

The first-sale right is approximated via other permissions to which Technological Patrons and content owners have agreed. For instance, consumers can often register their accounts on multiple devices.¹¹⁷ That means that family members and others wishing to share access to works can pool their titles and other creative works under one account, each register their devices to that account, and thereby access each others' works. This not only applies to e-books, but music, videos, and other creative works as well. In some cases accounts need not even be shared; in such cases the Technological Patron has simply secured the right of family members to each have access to the same content under separate accounts.¹¹⁸

<http://www.amazon.com/gp/help/customer/display.html/?nodeId=200747550> (last visited July 30, 2014) (detailing how consumers can borrow books from public libraries via Kindle technology); *Digital Borrowing*, <http://www.barnesandnoble.com/u/library-sideload-digital/379003794/> (last visited July 30, 2014) (detailing how consumers can borrow books from public libraries via Barnes & Noble's Nook technology).

¹¹⁶ *Id.*

¹¹⁷

Authorize

Your

Device,

<http://www.amazon.com/gp/help/customer/display.html?nodeId=201379910> (last visited July 30, 2014) (detailing this feature with respect to Amazon Music).

¹¹⁸ *Family Sharing. Sharing with Your Family Comes Naturally. Now It Comes to All*

While this type of functionality is not a perfect substitute for a first-sale right and certainly introduces some inconveniences, it does help avoid some of the harsher results of not having the right by allowing access to works among groups of closely associated persons, most typically families.

3. Digital Resale Marketplaces

Others have sought to establish digital resale marketplaces that approximate the physical world as much as possible and therefore address some of the concerns about digital piracy. For instance, Redigi, launched in 2011, offers a service that facilitates sales of used music files between customers.¹¹⁹ The platform includes technologies that verify that the files were legally purchased and attempt to prevent the person selling the file from retaining a copy for themselves.¹²⁰ Capitol Records sued Redigi in 2013 and won the case, with the judge ruling that the first-sale doctrine did not shield Redigi from copyright liability.¹²¹ An attempt to appeal the decision was denied.¹²²

Despite this setback, Redigi continues to operate and has refined its technologies in a way that, it claims, makes its services legal.¹²³ In fact, the company is planning to expand beyond music into e-books, software, and audiobooks as well.¹²⁴ As of the date of this writing, no additional lawsuits have been filed against Redigi based on its updated services; one can buy and sell used music files through the service today. Other more established Technological Patrons, such as Amazon and Google, have filed for and obtained patents covering the operation of digital resale markets.¹²⁵ While

Your Content, <https://www.apple.com/ios/ios8/family-sharing/> (last visited July 30, 2014) (detailing Apple's program that permits this).

¹¹⁹ *ReDigi Launches World's First Marketplace for Used Digital Music*, WHAT HI*FI? (Oct. 13, 2011), <http://www.whathifi.com/news/redigi-launches-worlds-first-marketplace-used-digital-music>.

¹²⁰ *Id.*

¹²¹ *Capitol Records, LLC v. ReDigi Inc.*, 934 F.Supp. 2d 640 (2013).

¹²² Ben Sisario, *A Setback for Resellers of Digital Products*, N.Y. TIMES (Apr. 1, 2013), available at http://www.nytimes.com/2013/04/02/business/media/redigi-loses-suit-over-reselling-of-digital-music.html?_r=0.

¹²³ *ReDigi Frequently Asked questions: Is ReDigi Legal*, <http://newsroom.redigi.com/faq/> (last visited July 31, 2014) (assuring users the current service is legal).

¹²⁴ See, for instance, ReDigi's website homepage, which prominently features the ability to buy and resell music, software, e-Books, and audiobooks, at <https://www.redigi.com/site/> (last visited July 31, 2014). However, as of the date of this writing, only buying used music was possible on the site.

¹²⁵ David Streitfeld, *Imagining a Swap Meet for E-Books and Music*, N.Y. TIMES (Mar. 7, 2013), <http://www.nytimes.com/2013/03/08/technology/revolution-in-the-resale-of-digital-books-and-music.html?pagewanted=all>.

they have not yet implemented these ideas, it may be only a matter of time before they do.

Thus, despite the absence of an absolute digital first-sale right, several Technological Patrons have either already sought to approximate its effect or may do so in the near future, both through contractual efforts and litigation. While additional legal challenges are nearly certain, the growing technological nature of the world suggests that technology's dependence on content, and vice-versa, will only grow. As a result, Technological Patrons' involvement in facilitating a digital first-sale right will likely grow, too.

B. Digital Fair Use

Technological Patrons have been at the forefront of other technological copyright questions as well. For instance, perhaps the most well-known exception to copyright's set of exclusive rights is what is known as "fair use." This exception allows for certain limited uses of copyrighted works, despite such uses technically infringing authors' exclusive rights under copyright.¹²⁶ Traditional categories that have qualified as fair use include using copyrighted works for purposes of criticism, news reporting, parody, teaching, scholarship, and research.¹²⁷

Nonetheless, what constitutes "fair use" has always been a difficult question to answer *ex ante*. The Copyright Act lists four non-exhaustive factors that courts assess in determining whether some use of a work is a "fair use": the purpose and character of the use, the nature of the copyrighted work, the amount of the copyrighted work used, and the use's effect on the market for or value of the copyrighted work.¹²⁸ Courts often give most weight to the purpose and character of the use factor—i.e., whether the use is "transformative" or not—as well as the use's effect on the market for or value of the copyrighted work.¹²⁹ But no one factor is dispositive.¹³⁰ Like any multi-factor balancing test, then, knowing

¹²⁶ U.S. COPYRIGHT OFFICE, FAIR USE, FL-102 (June 2012), <http://www.copyright.gov/fls/fl102.html>.

¹²⁷ *Id.*

¹²⁸ 17 U.S.C. § 107.

¹²⁹ See 4 MELVILLE B. NIMMER & DAVID NIMMER, NIMMER ON COPYRIGHT § 13.05 [A] [4] (2005) (stating that the fourth factor often "emerges as the most important, and indeed, central" factor in fair use cases (citations omitted)); *Campbell v. Acuff-Rose Music, Inc.*, 510 U.S. 569, 579 (1994) ("The more transformative the new work, the less will be the significance of other factors...."); Joel L. Hecker, *The Wave of the Future or Blatant Copyright Infringement?* 79-MAY N.Y. ST. B.J. 44 (2007) (indicating that courts have traditionally given the most weight in a fair use analysis to the first and four factors).

¹³⁰ *Campbell v. Acuff-Rose Music, Inc.*, 510 U.S. 569, 577-78 (1994) (indicating that no one factor is dispositive); *Sony Corp. of Am. v. Universal City Studios, Inc.*, 464 U.S. 417, 448 (1984) (same).

beforehand how a court will take the factors into account when assessing any given use is often speculative at best. Indeed, some have cited the porous nature of the fair use defense as one of the primary problems with it.¹³¹

With the rise of the Internet and the digitization of creative works, questions regarding what constitutes “fair use” in the digital sphere have abounded. Because the business models of many Technological Patrons critically depend on uses of digital content that, without a defense of fair use, may infringe copyright, Technological Patrons have been instrumental in litigating claims and successfully establishing a variety of fair uses in the digital sphere. The following sections detail a few of the more prominent examples thereof.

1. Perfect 10’s Perfect Storm

For instance, in the well-known *Perfect 10, Inc. v. Amazon.com, Inc.* case, Google secured a victory in the Ninth Circuit relating to permitted digital fair uses.¹³² Perfect 10 is an adult entertainment magazine that operates a subscription-only website.¹³³ A number of third parties had copied images of nude models from Perfect 10’s site and placed those images on various websites, in violation of Perfect 10’s terms of service and copyright rights.¹³⁴ Through Google and Amazon’s search technologies, users could access links to the third party sites hosting the infringing images and, in the case of Google’s image search, view degraded thumbnail versions of the images without accessing the actual website where the images were hosted.¹³⁵

Perfect 10 ultimately sued both Amazon.com, Inc. and Google for, among other things, violation of their distribution and display rights under copyright.¹³⁶ The District Court held that Google’s provision of thumbnail versions of the images violated Perfect 10’s display rights under copyright

¹³¹ See, e.g., *Monge v. Maya Magazines, Inc.*, 688 F.3d 1164, 1170 (9th Cir. 2012) (quoting *Dellar v. Samuel Goldwyn, Inc.*, 104 F.2d 661, 662 (2d Cir. 1939) (per curiam)) (referring to the fair use doctrine as “‘the most troublesome in the whole law of copyright.’”); NEIL WEINSTOCK NETANEL, COPYRIGHT’S PARADOX 66 (2008) (indicating that “[g]iven the doctrine’s open-ended, case-specific cast and inconsistent application, it is exceedingly difficult to predict whether a given use in a given case will qualify” as fair use).

¹³² 508 F.3d 1146 (9th Cir. 2007).

¹³³ *Id.* at 1157.

¹³⁴ *Id.* at 1154-6.

¹³⁵ *Id.*

¹³⁶ *Id.* at 1157.

law.¹³⁷

Significantly for purposes of digital fair use, on appeal the Ninth Circuit reversed the district court, holding that Google's provision of the thumbnail versions of the images constituted fair use of the images. The court held that the use was highly transformative in that the thumbnail versions indicated the source of information rather than being used for expressive purposes; use of the images in this different context was thus sufficient to satisfy the first factor of the fair use analysis.¹³⁸ And though such images may hypothetically supplant Perfect 10's licensing of such images for mobile devices, the court found that the use was so transformative as part of a search engine that the significant public benefit thereof outweighed whatever commercial advantages Google may have reaped therefrom.¹³⁹

The court weighted the second and third factors—the nature of the copyrighted work and the amount used—only slightly in favor of Perfect 10. Though the works were highly expressive and thus of the type that copyright law was meant to protect, the court found that this factor only weighed slightly in favor of Perfect 10 because the images were already found on the Internet prior to Google displaying thumbnail versions of them.¹⁴⁰ Perfect 10 was thus not entitled to the enhanced copyright protection that comes with unpublished works, though they remained entitled to some.¹⁴¹ On the third fair use factor, Google necessarily used the entirety of the images, so the court deemed this factor as neutral in the overall balance.¹⁴²

On the fourth factor—the use's effect on the market for or value of the copyrighted work—the court found that the thumbnail versions did not harm the market for the full-size images; thumbnail versions were no substitute to the larger ones.¹⁴³ Furthermore, though market harm may be presumed if use of the image is for commercial gain, that presumption does not arise in cases of transformative use because market substitution is less certain.¹⁴⁴ And last, though Perfect 10 has a licensing market for reduced-size images, there was no finding that Google users had actually downloaded the thumbnail versions for use on cell phones.¹⁴⁵ Consequently, the court found this hypothetical harm as merely that.

In sum, Google's efforts to advance image search technology also

¹³⁷ *Id.*

¹³⁸ *Id.* at 1165.

¹³⁹ *Id.* at 1165-6.

¹⁴⁰ *Id.* at 1167.

¹⁴¹ *Id.*

¹⁴² *Id.* at 1167-8.

¹⁴³ *Id.* at 1168.

¹⁴⁴ *Id.*

¹⁴⁵ *Id.*

resulted in it becoming subject to litigation that ultimately produced significant guidance on digital fair use. That guidance suggests that at least some courts are amenable to permitting use of copyrighted materials in new technological contexts that provide society significant benefits. Google and other Technological Patrons' interests thus lead them to not only provide patronage that facilitates increased production of and access to a wider variety of creative materials, but also result in these Patrons taking commercial risks to help establish the contours of significant exceptions to copyright rights such as digital fair uses. And with such contours more firmly established, innovators and creative persons alike are better equipped to pursue new lines of creative and innovative activity.

2. Google Books

In 2004 Google began its ambitious project of digitizing the world's available literature.¹⁴⁶ It formed partnerships with many high-profile university and public libraries in a laborious effort to digitize and then make available via search queries the libraries' tens of millions of book titles.¹⁴⁷

The Google Books project's precise scope has changed over time, but as currently implemented the service allows searching the full text of the books that Google has digitized, with some exceptions.¹⁴⁸ Once search results appear, users can access and download the full text of works that are in the public domain.¹⁴⁹ For other titles, the amount of text that appears depends presumably on what Google and the copyright holder have agreed to.¹⁵⁰

For instance, with some works, a preview of the work is available in the form of multiple accessible pages, some of which include the search terms.¹⁵¹ In such cases, it appears that Google and the copyright holder have reached some sort of agreement to make such amounts available to the public.

In other cases, only small snippets of text surrounding the search terms are available, presumably because the copyright holder and Google failed to agree to additional permissions.¹⁵² Google Books also provides links to purchase the searched books, both in hardcopy form and e-Book format

¹⁴⁶ *Google Books History*, <http://www.google.com/googlebooks/about/history.html> (last visited July 31, 2014).

¹⁴⁷ *Id.*

¹⁴⁸ *How Google Books Works*, <https://support.google.com/books/answer/43724?hl=en> (last visited July 31, 2014).

¹⁴⁹ *Id.*

¹⁵⁰ *Id.*

¹⁵¹ *Id.*

¹⁵² *Id.*

from its own Google Play store, when available.¹⁵³

Google's position all along has been that both digitizing the books and making small snippets of them available via search queries constitutes fair use.¹⁵⁴ While Google does copy the entire work in each case, which would typically weigh against a finding of fair use, Google and others consider the purpose and character of the copying to be highly "transformative," i.e., the project allows users to search through as well as find books, which functionality allows for a variety of uses beyond what the copyrighted works are traditionally used for.¹⁵⁵ Furthermore, Google and others believe that this type of transformative use fails to negatively affect the market for digitized works—if anything, the Google Books project improves the market for copyrighted works by allowing users to more readily find and purchase them.¹⁵⁶

Nonetheless, Google's initiation of the project brought immediate reaction from major publishing houses as well as other copyright holders and organizations associated with them. In short, these parties claimed Google had not obtained permission to create digital copies of their works and thus violated their rights under copyright.¹⁵⁷ They also contended that the doctrine of fair use did not apply to Google's use of their works.¹⁵⁸ Many of these same parties filed lawsuits in 2005 against Google, some of which suits are still alive today.¹⁵⁹

Others have already chronicled the exodus of these lawsuits, including class certification issues that arose during the litigation and the proposed and ultimately rejected settlements of the litigation.¹⁶⁰ The purpose here is not to repeat in detail that helpful work. Instead, it is to highlight the role that Google has played with the Google Books project and the subsequent litigation in helping further define what constitutes digital fair use. Indeed, the ultimate resolution of these issues provides additional evidence of the interdependencies between technology and copyright as well as more precisely delineating how they may work together going forward.

¹⁵³ *Id.*

¹⁵⁴ See Perspectives: Legal Analysis, <https://www.google.com/googlebooks/perspectives/legal.html> (last visited July 31, 2014).

¹⁵⁵ *Id.*

¹⁵⁶ *Id.*

¹⁵⁷ See Letter from Peter Givler, Executive Director, AAUP, to Alexander Macgillivray, Senior Intellectual Property and Product Counsel at Google, Inc., available at http://www.businessweek.com/bwdaily/dnflash/may2005/nf20050523_9039.htm

¹⁵⁸ *Id.*

¹⁵⁹ Complaint, Author's Guild v. Google, No 05 CV 8136 (S.D.N.Y. Sept. 20, 2005).

¹⁶⁰ See, e.g., James Grimmelman, *Future Conduct and the Limits of Class-Action Settlements*, 91 N. CAR. L. REV. 387 (2013); James Grimmelman, *The Elephantine Google Books Settlement*, 58 J. COPYRIGHT SOC'Y U.S.A. 497 (2011).

Naturally, Google has its own interests in pursuing the project; it must have some strategic commercial sense for the company. Otherwise, presumably, it would not undertake the significant costs and risks associated with the project. Be that as it may, Google's pursuit of its own interests in this case promises to help society generally by creating information about the scope of digital fair use that others can then rely on.¹⁶¹

Google, in fact, has already secured significant legal victories in its campaign to win a fair use ruling. Once the district court over the litigation rejected the parties' multiple proposed settlements, Google's fair use arguments again took center stage. On November 14, 2013, U.S. Circuit Judge Denny Chin in Manhattan accepted Google's argument that digitizing millions of books and then making snippets of the text available online via search queries constituted fair use.¹⁶²

Importantly, the court sided with Google in concluding that Google's use was transformative in nature by giving the books a new purpose or character.¹⁶³ And it cited the *Perfect 10* case in coming to this conclusion.¹⁶⁴ The first factor in the fair use equation thus weighed heavily in favor of Google. The court also reasoned that the project could be expected to boost rather than undermine book sales.¹⁶⁵ Hence, the other most significant factor in the fair use test, i.e., the use's economic effect, also, according to the court, went in Google's favor. Overall, the court held that the project provides society significant benefits while maintaining "respectful consideration" for authors' rights, despite the fact the Google copied the entirety of highly expressive works.¹⁶⁶

While several layers of appeal are possible—and the plaintiffs have already filed an appeal with the Second Circuit¹⁶⁷—the district court ruling nonetheless provides some interim clarification of what constitutes fair use in the digital sphere, at least in one major circuit: namely, that digitizing entire copyrighted works and then putting them to new, highly beneficial uses without negatively affecting the author's market for the works constitutes fair use.

¹⁶¹ For an argument that IP law should potentially expand to protect this type of information in order to reward the investments made by parties such as Google, see Michael Abramowicz & John F. Duffy, *Intellectual Property for Market Experimentation*, 83 N.Y.U. L. REV. 337 (2008).

¹⁶² Authors Guild, Inc. v. Google Inc., 954 F.Supp.2d 282 (S.D.N.Y. Nov. 14, 2013).

¹⁶³ *Id.* at 291-2.

¹⁶⁴ *Id.*

¹⁶⁵ *Id.* at 292-3.

¹⁶⁶ *Id.* at 293.

¹⁶⁷ Nicholas Tomsho, *Authors Guild Files Appeal in Google Copyright Claim*, JURIST (Apr. 12, 2014, 11:30 AM ET), <http://jurist.org/paperchase/2014/04/authors-guild-files-appeal-on-copyright-claim-against-google.php>.

The Second Circuit may have recently provided significant clues about how it will handle the plaintiffs' appeal in *Authors Guild v. Google, Inc.* In June 2014, the Second Circuit in *Authors Guild v. HathiTrust* upheld a district court ruling that HathiTrust's digitization of millions of copyrighted works into a full-text searchable database constitutes fair use of the copyrighted works.¹⁶⁸ The HathiTrust was founded in 2008 as an offshoot of the Google Books project.¹⁶⁹ It is a partnership of many major academic research libraries and includes digital materials from the Google project as well as from the Internet Archive, Microsoft, and in-house partner institutions.¹⁷⁰

Unlike the Google Books project, however, for most users the HathiTrust Digital Library ("HDL") does not display actual text from books in response to search queries. Instead, when most users search for terms in the HDL, results appear simply as page numbers of the book in which the terms appear.¹⁷¹

In applying the four fair use factors in this case, the court ruled that creation of a full-text searchable database is a "quintessentially transformative use" because the result of a term search differs in "purpose, character, expression, meaning, and message from the page (and the book) from which it is drawn."¹⁷² Again, the court cited the *Perfect 10* case in coming to its conclusion.¹⁷³ And though the nature of the copyrighted work—the second factor in the fair use analysis—might technically weigh in favor of the plaintiffs, that factor is not dispositive, according to the court, particularly in cases where the use is highly transformative, as is the case with the HDL.¹⁷⁴

The court ruled that the last two factors of the fair use test—the amount used and the economic effect—also weighed in favor of HathiTrust. First, copying the entire contents of each book was necessary in order to enable HathiTrust's transformative use of the works.¹⁷⁵ And second, the court reasoned that the plaintiffs failed to demonstrate that the HDL acts as a substitute in the marketplace for the original works.¹⁷⁶

Of course, the Second Circuit may rule differently in *Authors Guild v.*

¹⁶⁸ 2014 WL 2576342.

¹⁶⁹ *Id.* at *1

¹⁷⁰ *Id.*

¹⁷¹ *Id.* For those with certified print disabilities—or any disability that prevents a person from effectively reading printed material—the HDL does provides access to the full text of copyrighted works.

¹⁷² *Id.* at *7.

¹⁷³ *Id.*

¹⁷⁴ *Id.* at *8.

¹⁷⁵ *Id.* at *8-9.

¹⁷⁶ *Id.* at *9-11.

Google, Inc. because the search queries in the Google Books project do result in retrieval of snippets of text from the books in certain cases. Nonetheless, it would seem to require some mental gymnastics for the Second Circuit to come to a different conclusion in that case while remaining consistent with its ruling in *Authors Guild v. HathiTrust*.

After all, the Google Books project is still in all important respects the same as the HDL—namely, a searchable full-text database of copyrighted works—and thus the analysis relating to the first factor of the fair use equation should be the same: namely, that the use is highly transformative. The second and third factors of the fair use test relating to the nature of the copyrighted work and the amount used should also play out no differently. Namely, that while copyright law is meant to protect the types of works copied, the fact that the use is highly transformative should outweigh this factor as it did in the *HathiTrust* case. And, as in the *HathiTrust* case, Google necessarily copied the entire contents of each title in order to produce the searchable database.

The text retrieval element of the Google Books project should only affect the fourth factor of fair use, if any, i.e., the economic effect of the use on the market for or value of the copyrighted works. But it seems unlikely that the Second Circuit will rule that the snippets that Google displays actually substitute for the original works—most obviously because they do not.

Presumably, then, the result will be the same on this factor in both cases, and the overall result will be, too. Given the highly unpredictable nature of litigation, it is of course possible that the Second Circuit could come to a different conclusion on the basis of these or other differences between the two databases. Furthermore, even assuming a Google victory in the Second Circuit, other circuits, as well as the Supreme Court, would have to weigh in before additional certainty could be obtained. Nonetheless, for those that support the Google Books project and the legal outcomes thus far, there is certainly reason for optimism.

In sum, Google's pursuit of the Google Books project promises to provide significant benefits to society, to some extent regardless of the litigation's outcome. While this form of Technological Patronage may align with Google's strategic commercial vision, it should also ultimately provide society with significant information about the scope of digital fair use as well as, potentially, greater access to and information about the works themselves. The final rulings relating to fair use should thus help facilitate greater creative and innovative activities by creating greater certainty about what is permissible and what is not in the interrelationship between technology and copyright.

Of course, the opposite may also be true if the ultimate fair use rulings

were so broad that they undermined copyright owners' ability to obtain economic rewards for their works, which may have the effect of dampening the creative incentive upon which copyright law is predicated. But if we believe the courts' and others' reasoning about the economic impact of Google's and others' digitization of copyrighted works on the original works—and there seems to be good reasons to do so—then such Technological Patronage may instead enhance copyright holders' fortunes rather than diminish them.

Hence, the Google Books project and resulting litigation are further evidence of the interdependencies between Technological Patronage and copyright in a broader creative system. The institution of copyright helps generate creative works, which in turn trigger technological innovation aimed at making greater use of those works, which then facilitates such uses in ways that promote additional creative and innovative activity. And the cycle goes on. Though it may not always be virtuous, it nonetheless contradicts the opposing contentions that copyright, or technology, are the keys to creative output. In reality they both are.

C. Software's Copyright Problem

Technological Patrons have also recently been at the forefront of helping solve some of the biggest questions regarding software's copyrightability. In general, software is subject to copyright protection in the U.S.¹⁷⁷ Congress, courts, and even international treaties all mandate as much.¹⁷⁸ At the same time, copyright is only meant to extend to the expression of ideas, not the underlying ideas themselves. Indeed, the U.S. Copyright Act expressly excludes from copyright protection any “idea, procedure, process, system, method of operation, concept, principle, or discovery, regardless of the form in which it is described, explained, illustrated, or embodied.”¹⁷⁹ Patent law traditionally protects these categories to the extent that they otherwise meet the requirements of the Patent Act.

¹⁷⁷ 17 U.S.C. § 101 (2006) (defining a computer program as “a set of statements or instructions to be used directly or indirectly in a computer in order to bring about a certain result.”). Computer programming is not specifically enumerated as subject to copyright protection in the Copyright Act, as many other categories of works are, but according to some courts it is implicitly included as a literary work. *See* *Computer Assocs. Int'l., Inc. v. Altai, Inc.*, 982 F.2d 693, 702 (2nd Cir. 1992) (indicating that “[w]hile computer programs are not specifically listed as part of the ... statutory definition, the legislative history leaves no doubt that Congress intended them to be considered literary works.” (citations omitted)); *see also* 17 U.S.C. § 102(a) (2006).

¹⁷⁸ *Id.*; Berne Convention.

¹⁷⁹ 17 U.S.C. § 102(b).

Because software is by definition functional—in general it can be described as a series of instructions to bring about some predetermined result—it has proven difficult for courts to precisely delineate which aspects of software deserve copyright protection as original and creative expressions of the underlying idea, and which aspects fall within the categories mentioned above, for which Congress has expressly foreclosed copyright protection, and for which patent protection may be more appropriate.

One of the more significant questions about software copyrightability is whether application programming interfaces (“APIs”) are subject to copyright.¹⁸⁰ In general, APIs are a set of software tools and instructions meant to help software developers build software programs that work within the technological environment for which the APIs were created.¹⁸¹ In other words, APIs enable distinct software programs to effectively communicate and exchange information with each other. For instance, APIs enable a host of useful things that most take for granted: logging into a website using one’s Facebook credentials; cutting and pasting between distinct software programs; using non-Microsoft programs on devices powered by Microsoft Windows; obtaining Google Maps results on Yelp; and the list goes on. APIs thus allow for interoperability between software programs by allowing them to work together. And they are increasingly crucial in a digital ecosystem to enable collaboration between heterogeneous platforms and thereby unlock latent value.¹⁸²

In at least one sense, APIs would seem to be exempt from copyright protection. After all, at some level they can clearly be described as a system, method of operation, or procedure. To illustrate with a simplistic example: in order for Developer A’s program to operate with and effectively exchange information with Developer B’s program, Developer B’s APIs dictate the parameters for doing so. Developer A must follow specific procedures in order for Developer A’s program to interoperate with Developer B’s program; generally the APIs will dictate that certain source code headers—one might view them as tokens or keys—be used in order to

¹⁸⁰ See Pamela Samuelson, *The Strange Odyssey of Software Interfaces and Intellectual Property Law*, available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1323818 (tracing the evolution of how APIs have and have not been protected under IP law); John Harilee, *The Protection of the Unpublished Application Protocol Interface Under Copyright Law*, 4 VA. J. L. & TECH. 6 (1999) (addressing this question over a decade ago).

¹⁸¹ See generally Brian Proffitt, *What APIs Are and Why They’re Important*, READWRITE (Sept. 19, 2013), <http://readwrite.com/2013/09/19/api-defined>.

¹⁸² Interview with Sam Ramji, PRICEWATERHOUSECOOPER, <http://www.pwc.com/us/en/technology-forecast/2012/issue2/interviews/interview-sam-ramji-apigee.jhtml> (last visited July 10, 2014).

successfully trigger certain functions from and compatibilities with Developer B's program. As such, it is difficult to describe APIs as anything other than a system, method of operation, or procedure that the API originator has developed in order to allow others to create programs that interoperate with their own.

Indeed, some courts suggest as much. For instance, in an important Ninth Circuit case, *Sega v. Accolade*, the court indicates that the interface specifications—or parts of the APIs—of the Sega game console were unprotectable elements of the copyrighted software because, even if they were expressive in some measure, they were necessary to use in order to realize compatibility with the Sega game console.¹⁸³ Thus, Accolade maintained a successful fair use defense to its copying and decompiling of Sega's entire game console software in order to obtain access to the non-protectable pieces of the APIs and therewith create Sega-compatible games.¹⁸⁴

But does that mean third parties can replicate the APIs for their own purposes? In other words, if a party uses the APIs not in order to create a compatible software program, but instead to augment their own APIs and software programs, does the result change? Or should these questions even matter? After all, if the APIs are uncopyrightable and some other form of protection, such as a patent, does not exist, then third parties should be able to use them as they will. This and other related questions are the focus of one of the most important software copyright decisions issued to date, as described more fully below.

1. Android's Java Problem

Google's Android software has become the world's most popular software platforms for mobile devices, including smartphones, tablets, gaming consoles, and others.¹⁸⁵ Google licenses Android under a variety of permissive open source software licenses that make it accessible to parties other than just Google.¹⁸⁶ It thus powers devices from a variety of companies, including LG, Samsung, Amazon, Motorola, and many others.¹⁸⁷ As of November 11, 2013, Android was used on 43% of the

¹⁸³ 977 F.2d 1510, 1524-6 (9th Cir. 1992).

¹⁸⁴ *Id.*

¹⁸⁵ Steven Levy, *New Android Boss Finally Reveals Plans for World's Most Popular Mobile OS*, WIRED (May 13, 2013, 6:30 AM), <http://www.wired.com/2013/05/exclusive-sundar-pichai-reveals-his-plans-for-android/>.

¹⁸⁶ *Licenses*, <https://source.android.com/source/licenses.html> (last visited Aug. 1, 2014).

¹⁸⁷ Lisa Mahapatra, *Android Vs. iOS: What's the Most Popular Mobile Operating System In Your Country*, International Business Times (Nov. 11, 2013, 3:22 PM),

world's smartphones, making it by far the most popular mobile software platform in the world.¹⁸⁸

Part of Android's ubiquity and usefulness stems from its incorporation of Java application programming interfaces ("APIs"). Sun Microsystems originally developed the Java APIs; Oracle Corporation subsequently acquired Sun Microsystems and thus ownership to the Java APIs.¹⁸⁹ Sun developed the APIs to help programmers solve a ubiquitous problem: having to create a new version of a software program for every different technology platform in order for the program to operate properly on each.¹⁹⁰ The Java APIs helped solve this problem by enabling software developers to create programs once that could then operate on any number of different technological platforms.¹⁹¹

When building Android, Google elected to copy many aspects of the Java APIs into the Android ecosystem. Google did so largely because programmers were already familiar with many of the functionalities that the Java APIs permitted. Thus, Google decided to incorporate many of the same functionalities into Android so that programmers would have an easier time working with and adopting Android.¹⁹²

Google thus copied the basic structure, sequence, and organization of 37 specific Java APIs into the Android platform.¹⁹³ In some cases Google also copied from the Java APIs single words or short lines of software source code. Google copied this "declaring code" into Android because, without doing so, the pertinent Java API would not work as intended.¹⁹⁴ Google also copied entire files of source code in several instances.¹⁹⁵ But in nearly all other cases, Google created its own "implementing code," or the software that actually carries out the functions specified by the declaring code within the Java APIs.¹⁹⁶

Oracle ultimately brought copyright infringement claims against Google

<http://www.ibtimes.com/android-vs-ios-whats-most-popular-mobile-operating-system-your-country-1464892>.

¹⁸⁸ *Id.*

¹⁸⁹ Larry Dignan, *Oracle Buys Sun; Now Owns Java; Becomes a Hardware Player*, ZDNET (Apr. 20, 2009, 4:44 PM GMT), <http://www.zdnet.com/blog/btl/oracle-buys-sun-now-owns-java-becomes-a-hardware-player/16598>.

¹⁹⁰ See generally HISTORY OF THE JAVA™ PROGRAMMING LANGUAGE, WIKIBOOKS, available at http://en.wikibooks.org/wiki/Java_Programming/History (last modified July 8, 2014).

¹⁹¹ *Id.*

¹⁹² *Oracle Am., Inc. v. Google Inc.*, 872 F. Supp. 2d 974 (N.D. Cal. 2012).

¹⁹³ *Id.*

¹⁹⁴ *Id.*

¹⁹⁵ *Id.*

¹⁹⁶ *Id.*

on the basis of its use of the Java APIs within Android.¹⁹⁷ Google answered the suit by, among other things, arguing that the APIs were not subject to copyright and, even if they were, Google's use of them constituted fair use.¹⁹⁸ In a highly anticipated decision, the district court found that the basic structure, sequence, and organization of the APIs were not copyrightable because they were a system or method of operation,¹⁹⁹ which the Copyright Act expressly excludes from copyright protection, as described above.²⁰⁰

The district court also found that copying the declaring code could not constitute copyright infringement because the merger and short phrase doctrines barred copyright for that specific code.²⁰¹ That is, copyright generally only protects the expression of an idea, not the idea itself. And when only one or a limited number of ways exist to express a particular idea, the idea is said to merge with the expression, whereby copyright protection ceases for that expression.²⁰² Furthermore, copyright generally does not protect names or short phrases.²⁰³

The district court reasoned that because only one way exists to express the declaring code in order for it to operate as intended, the idea behind it merges with the expression and copyright protection is thereby foreclosed.²⁰⁴ Furthermore, because the declaring code is in each instance typically a single word or short line of software code, the short phrase doctrine also prevented the declaring code from obtaining copyright protection.²⁰⁵

Last, because the district court deemed that the Java APIs were not subject to copyright—or at least the parts of the APIs that Google copied—it found no need to order a new trial on the issue of fair use.²⁰⁶ The original jury had failed to resolve the issue, resulting in a “hung jury.”²⁰⁷

Oracle appealed the district court's decision, which appeal normally

¹⁹⁷ The original suit also included patent infringement claims. *See Oracle Sues Google Over Android*, REUTERS (Aug. 13, 2010, 2:23 AM EDT), <http://www.reuters.com/article/2010/08/13/us-google-oracle-android-lawsuit-idUKTRE67B5G720100813>. But Oracle ultimately lost on the patent claims. Oracle, 872 F. Supp. 2d at 976.

¹⁹⁸ Oracle, 872 F. Supp. 2d at 976.

¹⁹⁹ *Id.* at 976-7.

²⁰⁰ *See* 17 U.S.C. § 102(b).

²⁰¹ Oracle, 872 F. Supp. 2d at 976-7.

²⁰² *Id.*

²⁰³ 37 C.F.R. § 202.1(a).

²⁰⁴ Oracle, 872 F. Supp. 2d at 976-7.

²⁰⁵ *Id.*

²⁰⁶ *Id.* at 1001.

²⁰⁷ Rachel King, *Oracle v. Google Jury Returns Partial Verdict, Favoring Oracle*, CNET (May 7, 2012, 11:30 AM PDT), <http://www.cnet.com/news/oracle-v-google-jury-returns-partial-verdict-favoring-oracle/>.

would have gone to the Ninth Circuit.²⁰⁸ But because the original suit included assertions of patent infringement, the Court of Appeals for the Federal Circuit, which has nationwide jurisdiction over appeals involving patent assertions, heard the appeal.²⁰⁹

The Federal Circuit reversed the district court on nearly every important point. First, it emphatically held that the declaring code is subject to copyright because Oracle had infinite options as to the selection and arrangement of the thousands of lines of software that Google, in the cumulative, copied.²¹⁰ Furthermore, the court held that the short phrase doctrine does not bar copyright in this instance because the 7,000 lines of declaring code that Google copied should be viewed in the cumulative rather than as individual lines or words.²¹¹

The Federal Circuit also concluded that the general structure, sequence, and organization of the Java APIs were subject to copyright. The Federal Circuit found that the district court failed to follow binding Ninth Circuit precedent—which, according to it, holds that copyright can protect the expression of a process or method—and instead followed precedent from another circuit.²¹² Furthermore, even the precedent upon which the district court relied was distinguishable from the facts in the present case.²¹³ The Federal Circuit thus concluded that because Oracle employed creative choices in expressing the ideas underlying the Java APIs, that original work was subject to copyright protection, despite whatever functional elements they entailed.²¹⁴

On the fair use question, the Federal Circuit remanded the case for a new trial on the issue. Although in its review of the fair use factors the court seemed to side with Oracle's position that Google's use of the APIs was not fair use, the court concluded that enough material facts were still in dispute that it could not decide the issue as a matter of law.²¹⁵

This landmark decision has spawned significant controversy in the technology industry, with some suggesting the decision could prove disastrous,²¹⁶ while others believe the court came to exactly the correct

²⁰⁸ See Anthony J. Dreyer et al., *Federal Circuit Overturns Oracle v. Google and Potentially Widens Debate Over Copyright Protections*, SKADDEN, fn. 1 (May 15, 2014), <http://www.skadden.com/insights/federal-circuit-overturns-emoracle-v-googleem-and-potentially-widens-debate-over-copyright-#topftn1>.

²⁰⁹ *Id.*

²¹⁰ *Oracle Am., Inc. v. Google Inc.*, 750 F.3d 1339, 1361 (Fed. Cir. 2013).

²¹¹ *Id.* at 1362-3.

²¹² *Id.* at 1365-68.

²¹³ *Id.*

²¹⁴ *Id.* at 1367.

²¹⁵ *Id.* at 1376-7.

²¹⁶ Russell Brandon, *Federal Court Overturns Google v. Oracle Decision, Setting*

conclusions.²¹⁷ Google, of course, has a number of options. It can request an en banc review of the decision with the Federal Circuit, though the tenor of the original decision from the panel may suggest doing so will be futile.²¹⁸ It can also seek a decision from the Supreme Court, which it may do because of the high stakes involved.

If Google were not to do so, or if the Supreme Court were to deny its petition for a writ of certiorari, then a new trial on the fair use question would occur. Based on the Federal Circuit's opinion, Google's chances to prevail on that issue may not appear promising.

Generally, the Federal Circuit's decision reflects an expansive view of software copyrightability.²¹⁹ Essentially, the court suggests that so long as the software developer had some choices as to how to structure and design the APIs, the APIs are entitled to copyright protection. That is not a high threshold, and admittedly copyright law generally does not require much before a work becomes subject to copyright.

Part of what seems to underlie the court's reasoning is that Google did not copy the Java APIs in order to make them interoperable with Oracle's Java platform, but instead used them in order to create their own, potentially competing system that in fact is not compatible with Oracle's Java platform. Hence, the Federal Circuit calls Google's compatibility arguments confusing and points to evidence presented at the district court level indicating that Google adopted the Java APIs in order to make adoption by programmers more seamless.²²⁰

Of course, Google's compatibility argument is more nuanced than that; part of its rationale in adopting Java APIs is because developers that have written programs using Java can then use those programs within Android without having to completely rework the program. But the court dismissed this argument summarily, indicating that it had no evidence proving this point and that, in any event, the copyrightability of Oracle's software does not rest on Google's compatibility needs.²²¹

One key, unresolved issue stemming from this decision, therefore, is

Disastrous Precedent, THE VERGE (May 9, 2014, 1:53 PM), <http://www.theverge.com/2014/5/9/5699958/federal-court-overturms-google-v-oracle>.

²¹⁷ Florian Mueller, *Oracle Wins Android-Java Copyright Appeal: API Code Copyrightable, New Trial on Fair Use*, FOSS PATENTS (May 9, 2014), <http://www.fosspatents.com/2014/05/oracle-wins-android-java-copyright.html> (largely applauding the ruling).

²¹⁸ *Id.* (suggesting that a full-court review would probably not change the outcome).

²¹⁹ See Pamela Samelson, *Guest Post: Are APIs Patent or Copyright Subject Matter*, PATENTLYO (May 12, 2014), <http://patentlyo.com/patent/2014/05/copyright-subject-matter.html>; Dreyer, *surpa* note 208.

²²⁰ Oracle, 750 F.3d at 1371.

²²¹ *Id.*

what role does interoperability play in the software copyrightability analysis? The Federal Circuit suggests it is to be considered at the time of creation of the software only; that is, if interoperability concerns dictated a software developer's creative choices in designing the software, then those aspects of the work so dictated may not be copyrightable.²²² Interoperability concerns of third parties only become relevant, if at all, in a fair use analysis.²²³

But though the Federal Circuit purports to be applying Ninth Circuit law in so holding, several Ninth Circuit cases as well as cases from other circuits suggest that interoperability plays out differently in the software copyrightability analysis. *Sega*, for instance, may be interpreted to support the proposition that APIs absent the implementing code, to the extent their use is necessary in order to enable interoperability, are exempt from copyright protection as functional elements of the software.²²⁴ Other courts seem to agree.²²⁵

Of course, in Google's case, the Java APIs were used not to ensure compatibility with Oracle's Java Platform specifically, but rather with software programs that others write using the Java programming language and Java APIs. Whether that specific difference entails a different result is yet to be determined. But the policy behind allowing for interoperability in spite of copyright—namely, in order to encourage greater competition, innovation, and creative activity—would seem to apply in Google's case as well.

Indeed, if Google's case ultimately becomes a decision of fair use, arguments in favor of fair use are not altogether without merit, despite the Federal Circuit taking a rather grim view of their prospects. On the first factor—the purpose and character of the use, including whether the use is for commercial or nonprofit purposes—Google can make a case that what it has done with the Java APIs supersedes anything that Oracle has been able to achieve with them. Oracle has never successfully implemented the Java APIs as part of smartphone software platform.²²⁶ Google has and completely rewrote the implementing software code for the platform, as well as augmenting the 37 Java APIs with hundreds more of its own. Google will face challenges in winning this point, since in some nominal sense it has simply used the APIs in the manner for which they were

²²² *Id.*

²²³ *Id.*

²²⁴ Samelson, *supra* note 219.

²²⁵ *Id.*

²²⁶ Larry Dignan, *Google: Oracle, Sun, Blew It On a Java Smartphone*, CNET (Apr. 18, 2012, 5:46 AM PDT), <http://www.cnet.com/news/google-oracle-sun-blew-it-on-a-java-smartphone/>.

originally intended—that is, as APIs. But Google has arguably put them into a completely different context and helped transform the smartphone and mobile computing industry by doing so. Thus, though the use is certainly commercial in nature, if one accepts the view that the use of the APIs is highly transformative, the commercial aspect alone should not prove dispositive.

On the second factor, the nature of the copyrighted work, software is by nature utilitarian, and so logically more aspects of it should be found functional, and therefore uncopyrightable, than other types of creative works. Indeed, such a proposition finds support in the *Sony* and *Sega* cases mentioned above. And particularly in a case where a party such as Google copies aspects of the Java APIs primarily in order to replicate the categories of functions that the APIs provide for and which many in the industry expect—all the while undertaking the effort to write the code that actually implements the function itself—this factor would seem to support Google’s position.

On the third factor of the fair use analysis—the amount of the copyrighted work used—some of this analysis depends on how it is framed. For instance, Google only used 37 of hundreds of available Java APIs. But viewing the issue from a different angle, if each of the APIs is viewed as a separate work, then Google copied 37 separate works in their entirety. Of course, this is not how the Federal Circuit viewed the APIs—they viewed them in the cumulative, including the declaring code, in coming to the conclusion that the work included significant expressive choice. Overall, then, Google seemed to only use that number of the Java APIs that it deemed were essential for software developers accustomed to using Java to have.

The final factor—the use’s effect on the market for or value of the copyrighted work—may be the most difficult obstacle to Google winning a fair use argument. Before Oracle acquired Sun, the company had a long history of licensing the APIs; indeed, licensing APIs is not uncommon in the world of technology. Of course, it seems questionable to foreclose a finding of fair use simply because a party is willing to license assets and others are willing to pay, though some courts have engaged in such circular reasoning.²²⁷ Indeed, risk-averse parties may regularly pay for things that the law may not actually require of them.²²⁸ For instance, a prominent

²²⁷ See *American Geophysical Union v. Texaco Inc.*, 60 F.3d 913 (2d Cir. 1994) (rejecting Texaco’s fair use argument, largely on the basis that copying individual journal articles hurt the licensing market for the individual articles even though, at the time, the market was not well-developed).

²²⁸ See James Gibson, *Risk Aversion and Rights Accretion in Intellectual Property Law*, 116 YALE L.J. 882 (2007) (arguing generally that risk aversion may generally lead to

engineer at Google notoriously indicated in the run-up to the *Oracle v. Google* decision that he was under the impression that the company would need to license the APIs from Sun Microsystems, and Google in fact engaged in extensive negotiations with Sun Microsystems to license the APIs, though they never reached a deal.²²⁹

While all of this may seem damning for Google's fair use case, the question nonetheless remains what the market impact of Google's use was. Oracle clearly lost some revenues from the lost licensing opportunity to Google. But Oracle has never successfully developed a smartphone/tablet software platform using its Java APIs, and so Google's use of the APIs in such a platform does not appear to undercut any revenues that they expected or are expecting.²³⁰ True, Oracle was free to continue to try to do so, but they never did and do not appear poised to do so. So preventing Google from using the APIs, on the mere supposition that Oracle may eventually do so, or may eventually successfully license someone else to do so, seems like the wrong result.

In fact, in some respects Google's use of the Java APIs may actually enhance Oracle's market for the Java APIs. Because Google incorporated the APIs into its own platform, software developers that use Java now need not switch APIs. While Google's use of the APIs may not be the only factor in encouraging developers to continue to use Java, it may be a significant one. Android's incorporation of Java APIs thus may actually bolster Java as an industry standard, which in the future may mean that third parties are more likely to use Oracle's Java-related products for other purposes for which Oracle has technological solutions.

2. Conclusion

In sum, many unanswered questions remain following the Federal Circuit's decision in *Oracle v. Android*. Many feel that the court reversed decades of well-settled law that allowed for use of functional aspects of

an expansion of intellectual property rights, or at least how parties and courts perceive the scope of intellectual property rights).

²²⁹ Brandon Bailey, *Larry Page Evasive With Oracle's Lawyer, But Admits Google Never Obtained Java License*, SAN JOSE MERCURY NEWS (Apr. 18, 2012, 9:55:02 AM PDT), http://www.mercurynews.com/ci_20424638/google-oracle-trial-larry-page-admits-android-java-licence (detailing some of the history of the negotiations between the two sides).

²³⁰ Larry Dignan, *Google: Oracle, Sun Failed at Java Smartphone Now Stop Whining*, ZDNet (Apr. 18, 2012, 05:22 GMT), <http://www.zdnet.com/blog/btl/google-oracle-sun-failed-at-java-smartphone-now-stop-whining/74561> (highlighting Google's evidence that Sun/Oracle had tried but failed multiple times to develop a Java-based software platform for smartphones).

works in order to permit interoperability.²³¹ And yet others feel that the court's decision helps protect valuable business assets, which, in the end, should help promote innovation.

Though the final result will certainly have significant effects on the creative and innovative industries, the larger point for purposes of this Article is to highlight the role that Google and others play in helping address some of the more contentious issues in copyright law today. In other words, while the specific results matter, the meta-result—that is, having additional guidance at all—is also crucial in enabling other parties to take into account risks in pursuing creative and innovative activities. Technological Patrons such as Google thus take on significant financial risks in pursuing activities that, because of interdependencies between technology and copyright, implicate vital copyright questions, with respect to both software and other digital content. They therefore not only provide significant patronage that facilitates creative activity directly, but also ultimately help resolve the meaning of the law itself, which in the end also facilitates creative as well as innovative activity.

V. TECHNOLOGICAL PATRONAGE'S DARK SIDE

This Article has thus far explored the significant ways in which Technological Patrons such as Google, Amazon, and others facilitate creative activity by both 1) contributing tools and content to society that lead to increased production of and access to a more diverse set of creative works, and 2) helping resolve some of the thornier issues in copyright law by means of both contractual arrangements and litigation. In so doing, Technological Patrons aid copyright in achieving its purpose of promoting “Science and the useful Arts.” And, of course, Technological Patrons provide such support in part due to copyright and the commercial possibilities associated with it. Technology and copyright are thus increasingly dependent on each other, particularly as the world grows increasingly technological.

But Technological Patronage comes with its set of warts. Though more and more companies have concluded that openness and collaboration are often a successful business strategy, they certainly do not always follow that mantra. Particularly in cases where Technological Patrons have significant market position, they may use that position to pursue what they perceive as their commercial interests at the expense of other considerations. In such cases, one casualty can be the purposes behind copyright, in which cases the synergies between copyright and Technological Patronage explored above

²³¹ See Samelson, *supra* note 219.

appear to break down.

But, as this section will argue, the remedy to such ills is not in general to bolster copyright. Copyright owners currently have sufficient rights that give them significant bargaining power with Technological Patrons. The ill to be corrected in many such cases is market concentration, not an excessively weak copyright. And the natural antidote to excessive market concentration is antitrust law, not copyright.

This Part will first review some of the more recent situations where Technological Patrons have used their superior market positions to undermine access to and production of creative works. It will also explore why antitrust law is the best means to addressing these types of scenarios.

A. Amazon's Hachette Job

Amazon is the leader in the world of e-Books and e-Readers. Though the company never publicly reveals sales figures, a variety of sources suggest it is clearly at the front of the pack and is poised to remain so, despite significant challenges from the likes of Apple, Barnes & Noble, and Google.²³²

Amazon at times has used this market position to the advantage of consumers, at least in some respects. For instance, historically Amazon retained the contractual ability to set retail prices for the e-Books it sold, and it accordingly in many cases sold books at prices below the wholesale prices that it paid the copyright owners.²³³ Copyright owners did not favor this setup, since in their view such lower prices tended to devalue books generally.²³⁴ Nonetheless, publishing houses were at a disadvantage in

²³² See Aaron Pressman, *Slowing Ebook Sales May Embolden Publishers in Amazon Spat*, YAHOO! FINANCE (June 26, 2014, 4:28 PM), <http://finance.yahoo.com/blogs/breakout/slowng-ebook-sales-could-hurt-amazon-in-battle-with-publishers-174752232.html> (indicating Amazon is in the lead in the e-Book market and may be still gaining); Jeremy Greenfield, *Kindle Most Popular Device for Ebooks, Beating Out iPad; Tablets on the Rise*, Forbes (Oct. 30, 2013, 4:26 PM), <http://www.forbes.com/sites/jeremygreenfield/2013/10/30/kindle-most-popular-device-for-ebooks-beating-out-ipad-tablets-on-the-rise/> (indicating 40% of people that read e-Books own an Amazon Kindle dedicated e-Reader).

²³³ *What Is the Agency Model for Ebooks? Your Burning Questions Answered*, PUBLISHING TRENDSETTER (May 1, 2012), <http://publishingtrendsetter.com/industryinsight/simple-explanation-agency-model/> (summarizing the differences between the so-called agency model in which the book publisher sets the retailer price and remits 30% of the sale to Amazon; and the wholesale model in which the book publisher sells the book to the retailer at a specified price, and the retailer is able to set the retail price, in its discretion).

²³⁴ *Id.* See also Rupert Murdoch: "Amazon Pricing Devalues Books," Reuters (Feb. 3, 2010, 10:15 AM), available at <http://www.pcpro.co.uk/news/355255/rupert-murdoch->

changing it given Amazon's superior market position. Amazon was forced to change this pricing scheme once Apple joined the e-Book fray and agreed to allow publishing houses to set the retail prices, though it later came under antitrust scrutiny for alleged price fixing with the publishing houses.²³⁵

But Amazon has also used its superior market position in ways that arguably harm access to and production of creative works. For instance, more recently the company restricted access to and eliminated discounts on offerings from a major publishing house, Hachette, over a purported contractual dispute.²³⁶ Not coincidentally, Amazon sought renegotiation of its contracts with Hachette once the antitrust actions against Apple and the other major publishing houses were largely resolved.²³⁷ Amazon has thus begun to seek contract renegotiations with Hachette other publishers as well, presumably among other things seeking to reinstate the wholesale pricing model that they previously employed.²³⁸ In such cases, the synergies between copyright and Technological Patronage may appear to have broken down.

But in reality, the problem may be a market concentration one rather than having anything intrinsically to do with the relationship between Technological Patronage and copyright in yielding increased creative and innovative activity. In seeking to renegotiate its contracts with Hachette and others, for instance, Amazon does not appear to be exploiting weak rights under copyright. Instead, its leverage is based in its dominant position in the world of e-Books. The best solution, therefore, is one rooted in antitrust law rather than content owners needing additional rights under copyright to thwart such efforts.

Of course, such solutions may come with a cost; after all, the market sway that Amazon and others have can lead to significant consumer benefits such as, for instance, stronger digital first-sale rights and lower prices. But the question nonetheless seems to be most appropriately handled as a matter of antitrust law, rather than as a copyright issue.

amazon-pricing-devalues-books.

²³⁵ *Id.*

²³⁶ Emma Cueto, *Amazon vs. Hachette: Everything You Need to Know About This Feud*, BUSTLE, <http://www.bustle.com/articles/26570-amazon-vs-hachette-everything-you-need-to-know-about-this-feud> (last accessed July 14, 2014)

²³⁷ *Id.*

²³⁸ Nate Hoffelder, *Amazon Now Bullying Bonnier in Negotiations Over Book, Ebook Contracts*, THE DIGITAL READER (May 16, 2014), <http://the-digital-reader.com/2014/05/16/amazon-now-bullying-bonnier-in-negotiations-over-book-ebook-contracts/#.U8Q7TRZN1Fw>.

B. YouTube's Indie Label Doomsday

As noted, YouTube has become one of the most popular ways in the world to access music and video. The site now partners with major record labels and other content owners to host a significant amount of music and video content that users often have been able to access for free, subject to advertising.

But YouTube has begun to change its services in response to competitive pressures. Online streaming music services such as Pandora and Spotify have increased competition in the field, offering a variety of enhanced music streaming capabilities that have lured many consumers to their services. Accordingly, YouTube has begun to offer new services meant to compete with the offerings of these and other companies.

For instance, in 2013 Google launched the "Google Play Music All Access" subscription service that allows those paying a monthly fee to access music on demand, ad-free.²³⁹ And more recently, Google has announced that it will introduce a subscription-based streaming music service on YouTube that may work in conjunction with the Google Play Music All Access service.²⁴⁰

As part of being able to introduce this service, Google has sought to negotiate new terms and conditions with major record labels as well as independent artists and labels. But many of the independent labels balked at the terms that YouTube demanded, arguing that accepting the terms was not plausible for them and that major record labels received more favorable conditions than Google offered the independent labels.²⁴¹

Initially, Google responded to the concerns of independent labels with a "take-it-or-leave-it" approach, indicating that they would launch the service simply without the music of those refusing the terms.²⁴² Furthermore, if the independent labels did refuse to sign up to the proposed terms, they would also be shut out from the free, ad-supported version of YouTube.²⁴³

²³⁹ Josh Constance, *Google Launches "Google Play Music All Access" On-Demand \$9.99 A Month Subscription Service*, TECHCRUNCH (May 15, 2013), <http://techcrunch.com/2013/05/15/google-play-music-all-access/>.

²⁴⁰ Steven Knopper, *YouTube's new Subscription Service: Indie Labels Speak Out*, ROLLING STONE MUSIC (July 1, 2014, 1005 AM ET), <http://www.rollingstone.com/music/news/youtubes-new-subscription-service-indie-labels-speak-out-20140701>.

²⁴¹ *Id.*

²⁴² *YouTube to Block Indie Labels Who Don't Sign Up to New Music Service*, THE GUARDIAN (June 17, 2014, 10:03 AM EDT), <http://www.theguardian.com/technology/2014/jun/17/youtube-indie-labels-music-subscription>.

²⁴³ *Id.*

Subsequently, amid some public uproar, Google delayed the service's launch while seeking to work out contractual issues with the remaining holdouts.²⁴⁴

The YouTube-independent labels scenario may thus parallel the Amazon-Hatchette situation in important respects. In both cases the parties providing the Technological Patronage wield significant bargaining power because their platforms have become so dominant in their respective fields. And if the dominant party in this case, YouTube, does ultimately shut out music from independent labels because of their failure to accede to YouTube's terms, then arguably the synergies between Technological Patronage and copyright collapse as access to and production of music content is hindered rather than facilitated.

But again, the power imbalance does not seem to be rooted in the scope of copyright. That is, limiting the scope of fair use, or eliminating the first-sale doctrine entirely, would not, for instance, seem to remedy the situation. Instead, if anything, the breakdown between Technological Patronage and copyright in yielding access to and production of creative works stems from market concentration. And so as a theoretical matter, the synergies between the two remain possible so long as other bodies of law, such as antitrust, are working as intended.

But these types of breakdowns do suggest an important theoretical point about copyright. In the technological age in which we live, copyright, on its own, is unable to provide authors the means by which to successfully create. Technological Patronage is increasingly necessary, and the two are increasingly interdependent. And as we see in situations such as with YouTube and Amazon, when providers thereof threaten to withdraw their support, authors, even armed with copyright, can be hard-pressed to succeed. In such cases, antitrust may also be a necessary co-dependent in fostering a healthy creative and innovative landscape.

C. "Closed" Android

The history of the Android software platform also explicates some of the themes discussed above. As mentioned previously, Android has become one of the most popular and important software technologies in the world, powering an array of mobile devices from a host of different parties.

Because Google provides Android under a variety of permissive, open source software licenses, anyone can take Android free of charge and adapt it to their own purposes. This form of Technological Patronage has thus

²⁴⁴ Evan DeSimone, *YouTube Gives Indie Labels a Reprieve ... For Now*, NMR (July 7, 2014, 1:08 PM), <http://newmediarockstars.com/2014/07/youtube-gives-indie-labels-a-reprieve-for-now/>.

facilitated a significant amount of creative and innovative activity as parties have made use of the provided technologies on a variety of devices.

But the story of Android is more complicated than that. For instance, for those wishing to have access to Google's suite of applications such as Google Maps, Gmail, and others on their Android-powered devices, one must sign Google's so-called "Anti-Fragmentation" Agreement ("AFA").²⁴⁵ Among other things, the AFA severely limits Android users' ability to modify Android in ways that Google does not approve.²⁴⁶ Parties remain free to use Android without signing the AFA—Amazon has done precisely that with its own version of Android that powers its mobile devices—but in so doing they are cut off from a set of software programs that Android users have come to expect.²⁴⁷

In obtaining access to the suite of applications, users are also required to install the entire suite of software programs; no substitutes or deletions are permitted.²⁴⁸ Thus, if a party had its own search application but wanted the rest of the Google programs, in order to obtain them it would have to preinstall Google's search application in spite of having its own.

Google has also at times restricted access to new releases of the Android software.²⁴⁹ Although Google has publicly committed itself to keeping Android "open" for anyone to use, such incidents suggest that commitment can occasionally waver based on presumably commercial self-interests.²⁵⁰

Hence, in providing Technological Patronage in the form of Android, Google has helped create the most popular mobile software platform in the world. But a darker side of such Patronage is that this dominance has created certain, perhaps excessive dependencies in others that Google can then exploit to its own advantage. And it may make good commercial sense, in some respects, to do so.

But the larger theoretical point also remains true in the case of Android. That is, resolving this type of issue, if it does need resolution, probably lies in the province of antitrust law. Google's Technological Patronage remains capable of combining with copyright to produce a wide array of creative

²⁴⁵ Jon Brodtkin, *Google Blocked Acer's Rival Phone to Prevent Android "Fragmentation,"* ArsTechnica (Sept. 14, 2012, 9:15 PM MDT), <http://arstechnica.com/gadgets/2012/09/google-blocked-acers-rival-phone-to-prevent-android-fragmentation/>.

²⁴⁶ *Id.*

²⁴⁷ Kevin C. Tofel, *What You Need to Know About Open Android and Google's Android Apps,* GIGAOM (Feb. 13, 2014, 10:29 AM PDT), <http://gigaom.com/2014/02/13/android-open-google-licensing-apps-services/>.

²⁴⁸ *Id.*

²⁴⁹ *Google Restricts Access To Android Honeycomb,* INT'L BUS. TIMES (Mar. 25, 2011, 4:58 PM), <http://www.ibtimes.com/google-restricts-access-android-honeycomb-277271>.

²⁵⁰ *Id.*

and innovative works—as it has previously—so long as the competitive landscape remains a healthy one. Some argue it is not so and have recently filed lawsuits to that effect, thereby mirroring in some respects earlier suits against Microsoft on the basis of its bundling of its software programs.²⁵¹ Time will tell if the courts and government ultimately agree.

D. Antitrust Law to the Rescue?

The preceding sections suggest that antitrust law, rather than copyright, holds the keys to resolving situations where Technological Patrons act in ways that may harm access to and production of creative and innovative works. The basis for that argument is that the problems, if they are problems, are ones of competition rather than rights under copyright.

But triggering antitrust action can be a high bar. For instance, in the case of the Amazon-Hatchette spat, many experts suggest that antitrust activity is unlikely; Amazon is simply acting in its own self-interests in seeking to reap the greatest amount of profit from the bargain.²⁵² In other words, the fight between the two is a standard-issue business battle, rather than an antitrust violation.²⁵³ In fact, Amazon engaged in similar behavior in 2010 with respect to another major publishing house, without triggering antitrust activity.²⁵⁴

Furthermore, U.S. antitrust law often focuses on behavior that raises prices for consumers; in Amazon's case, its efforts are actually geared towards lowering prices for e-Books, thereby further diminishing the likelihood of antitrust activity against it.²⁵⁵ The same may also hold true in the YouTube-independent labels' fight.

The European Union has in some cases been a more fertile ground in terms of bringing successful antitrust actions in such scenarios. For instance, antitrust activity against Microsoft for bundling of its software programs was successful in Europe while largely failing in the U.S.²⁵⁶ To

²⁵¹ Paul Thurrott, *Google Seeks Dismissal of US-Based Android Antitrust Lawsuit*, WINDOWS IP PRO (Jul. 14, 2014), <http://windowsitpro.com/paul-thurrotts-wininfo/google-seeks-dismissal-us-based-android-antitrust-lawsuit>

²⁵² Diane Bartz, *Amazon/Hachette Dispute Unlikely to Provoke Regulators, Experts Say*, REUTERS (May 29, 2014, 7:53 PM EDT), <http://www.reuters.com/article/2014/05/29/us-hachette-amazon-com-antitrust-idUSKBN0E92H620140529>

²⁵³ *Id.*

²⁵⁴ *Id.*

²⁵⁵ Robert Levine, *How the Government Blew Its Chance to Rein in Amazon*, VANITY FAIR (June 2, 2014, 1:44 PM), <http://www.vanityfair.com/online/daily/2014/06/amazon-hachette-antitrust-backfire>.

²⁵⁶ Sue Ann Mota, *Hide It or Unbundle It: A Comparison of the Antitrust Investigations Against Microsoft in the U.S. and the E.U.*, 3 PIERCE L. REV. 183 (2005)

that end, an independent association of independent music labels recently filed an antitrust complaint with the European Commission against YouTube based on its threats to remove the independent labels offerings from the free version of YouTube if the labels do not accede to YouTube's proposed terms for its subscription service.²⁵⁷ Independent labels have pursued similar actions in the U.S.²⁵⁸

It is beyond the scope of this Article to explore precisely how antitrust law may or may not be applied to address such scenarios, or how it may reformed to do so. Instead, one of the critical points to stress is that copyright's growing interdependence with Technological Patronage in many cases does not appear to require significant changes to copyright law, even in cases where copyright's dependence may be excessive, as in some of the scenarios discussed above. At times in the past, expanding copyright in the face of technological advancement has been the response; the Digital Millennium Copyright Act, which, among other things, instituted a variety of prohibitions against circumventing digital rights management ("DRM"), is one such example.

But with the types of Technological Patronage discussed above, addressing potential overdependence with expanded copyright protections seems like a solution that does not match the problem. The problems, if at all, consist of market concentration that expanded copyright rights would do little if anything to alleviate. Such concerns are thus the proper domain of antitrust law.

This point, indeed, supports the general argument of this Article: copyright is not a standalone system for facilitating creative activity, and conceiving of it as so leads to solutions to vexing problems that compound rather than solve them. Instead, copyright is an important piece of a broader creative system, which system includes not only growing amounts of vital Technological Patronage, but antitrust law as well.

VI. OTHER LEGAL IMPLICATIONS OF COPYRIGHT'S TECHNOLOGICAL INTERDEPENDENCIES

This Article has, among other things, argued that creative and

(comparing the relatively lenient outcome in the U.S. to the heftier fines in the E.U.).

²⁵⁷ Stuart Dredge, *Impala Files EC Antitrust Complaint Over YouTube Indie Label Licensing*, THE GUARDIAN (June 27, 2014, 11:59 AM EDT), <http://www.theguardian.com/technology/2014/jun/27/impala-youtube-ec-complaint-indie-label-licensing>.

²⁵⁸ Andy Gensler, *Rich Bengloff on A2IM Indie Week, YouTube Licensing; Alleges Majors' Shady Streaming Terms*, BILLBOARDBIZ (June 17, 2014, 3:45 PM EDT), <http://www.billboard.com/biz/articles/news/indies/6121566/rich-bengloff-on-a2im-indie-week-youtube-licensing-alleges-majors>

innovative activities play an important role in facilitating one another. That is, creative activities often have the effect of triggering innovative activities, and vice-versa.

And yet, patent law and copyright law are typically conceived of as independent institutions with different purposes.²⁵⁹ Patent law is generally meant to incentivize and protect inventive and innovative activity, while copyright law aims to encourage and safeguard creative pursuits.²⁶⁰ While some commentators have identified certain commonalities between the two bodies of law in terms of how they go about achieving their separate purposes,²⁶¹ or suggest that more such commonalities should exist,²⁶² less typical are calls for either body of law to explicitly take into account and seek to facilitate the purposes of the other.²⁶³

This Article, in contrast, suggests that both copyright and patent law would be well-served in incorporating changes that facilitate the purposes of the other. In other words, because of the interdependencies between technological innovation and creative activity, the bodies of law meant to encourage each should explicitly acknowledge those interdependencies. Indeed, doing so would arguably unlock latent potential in spurring both creative and innovative efforts.

Others have advocated measures that, if adopted, would arguably help achieve such purposes. For instance, Edward Lee has proposed a “technological fair use” defense to copyright infringement that more explicitly takes into account the technological landscape and its effects on digital content creation.²⁶⁴ And yet others have proposed expanding the experimental use defense under patent law which, depending on how such a

²⁵⁹ See Christopher Buccafusco et al., *Experimental Tests of Intellectual Property Law’s Creativity Thresholds*, 92 TEX. L. REV. 1921, 1921-31 (2014) (laying out some of the basic differences, both in terms of implementation and purposes, between copyright and patent law).

²⁶⁰ *Id.*

²⁶¹ See, e.g., WILLIAM M. LANDES & RICHARD A. POSNER, *THE ECONOMIC STRUCTURE OF INTELLECTUAL PROPERTY LAW* 294-300 (2003) (finding many similarities as well as differences between patent and copyright law).

²⁶² See, e.g., Jeanne C. Fromer & Mark A. Lemley, *The Audience in Intellectual Property Infringement*, 112 MICH. L. REV. 1251 (2014) (arguing, among other things, that patent law would benefit by adopting some of copyright law’s infringement analysis tenets).

²⁶³ But see Gregory N. Mandel, *To Promote the Creative Process: Intellectual Property Law and the Psychology of Creativity*, 86 NOTRE DAME L. REV. 999 (2011) (arguing that an antecedent to artistic and technological innovation is creativity, and that intellectual property law generally, therefore, should not be implemented in ways that undermine creativity). This nonetheless falls short of a call for explicitly incorporating into patent and copyright law measures meant to achieve the purposes of the other.

²⁶⁴ Lee, *surpa* note 2.

proposal were implemented, could better protect nascent creative activities that otherwise might infringe relevant patents.²⁶⁵

The point here is not to review in detail and either recommend or disavow such proposals, nor is it to make any additional specific proposals about how copyright should take into account the purposes of patent law, and vice-versa; doing so is well beyond the scope of this Article. Instead, this Article suggests that exploring these and related proposals is a vital area for future research in order to better equip both patent and copyright law to facilitate the interdependencies between technological innovation and creative activity that this Article has discussed.

Doing so may seem to some to overburden the separate bodies of law. After all, both copyright and patent law have enough to worry about, let alone having to try to address their effects on the purposes that the other body of law is meant to realize. But arguably many of each body of law's problems arise in part by conceiving each of them as standalone systems sufficient in and of themselves to achieve their stated goals. This Article's exploration of the interdependencies between the two suggests such is not the case.

Nor is it constitutionally required. If anything, in fact, the Constitution's IP Clause seems to treat patent and copyright law as interrelated. The Clause grants Congress the power to enact intellectual property law, reading in its entirety: "To promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries." The Clause thus does not indicate that "Authors" are only relevant to the "useful Arts," or that only Inventors are germane to the "Progress of Science." Instead, one reasonable—and, in light of this Article's arguments, appropriate—interpretation of the text is that smartly securing and limiting rights to authors and inventors alike will have a productive impact on the progress of both "Science and the useful Arts." In this Article, I fully agree.

CONCLUSION

In this Article, I have argued that copyright, contrary to traditional accounts of its origins, is not a truly independent means by which to encourage creative activity. Indeed, ironically, the system that copyright was meant to displace—patronage—has resurfaced in a modern-day technological incarnation as a vital complement to copyright in spurring

²⁶⁵ Rochelle Cooper Dreyfuss, *Does IP Need IP? Accommodating Intellectual Production Outside the Intellectual Property Paradigm*, 31 *CARDOZO L. REV.* 1437, 1469-70 (2010) (arguing that the experimental use defense to patent infringement should be expanded).

creative activity. That creative activity, in turn, helps trigger additional innovative activity. And the interdependencies between the two are only likely to grow as the world grows increasingly technological in nature.

This account thus suggests that, rather than undermining the creative industries, many forms of technological advancement are instead increasingly necessary to them. Hence, copyright's default response to technological advancement should not be preclusion, like it often has been, but instead inclusion. That inclusion does not require an "anything goes" attitude, but it should at least recognize the technological realities of the broader creative system. Indeed, as a matter of copyright theory, recognizing copyright's interdependencies will go a long way in addressing as a practical matter proposed solutions meant to enhance its creative proclivities.

None of this is meant to suggest that copyright is irrelevant to encouraging creative activity. It remains a vital piece of the puzzle. And, as suggested throughout, it is crucial to helping trigger vast amounts of technological innovation as well, which in turn expands copyright's capacities. But copyright remains only one piece. Recognizing the value and contributions of other pieces, and encouraging their advancement, therefore, should be a vital piece of any effective copyright policy. Indeed, these interdependencies suggest that reforming both copyright and patent law to advance the purposes of the other is important to unlocking each body of law's full potential.

Of course, not all is rosy in the relationship between Technological Patronage and copyright. As discussed above, at times Technological Patrons may overreach in ways that reduce access to and production of creative works. But in such cases, another piece of the puzzle—antitrust law—seems better suited than copyright to addressing issues that largely arise from market concentration. In other words, copyright certainly has an important role to play in the broader creative system. But overburdening it with tasks within that system that it is ill-fitted to perform not only fails to solve the perceived problems, but may create additional ones as well.