

# UNKNOWN FUTURES AND THE KNOWN PAST:

## WHAT CAN PATENT LEARN FROM COPYRIGHT IN THE NEW TECHNOLOGICAL AGE?

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## I. INTRODUCTION

Courts often compare patent and copyright law,<sup>1</sup> and they frequently apply patent doctrine in copyright cases.<sup>2</sup> For example, the Supreme Court has used patent law to devise the test for secondary liability in copyright, noting that the copyright rule reflects the Patent Act's balancing of the "public interest in access to [an] article of commerce" and incentivizing innovation.<sup>3</sup> Courts have also imported patent misuse standards into copyright law.<sup>4</sup> The Supreme Court has, however, warned against blanket cross-application of patent and copyright law.<sup>5</sup>

These judicial comparisons likely arise at least in part due to the many similarities between patent and copyright laws. For example, despite differing arguments in each regime over the proper balance of the goals of protecting innovative creators and promoting social welfare by encouraging access to and use of new things, the two bodies of law perform closely-related functions.<sup>6</sup> Each is subject to a constitutional mandate "to promote [p]rogress."<sup>7</sup> Each grants certain exclusive rights to the

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<sup>1</sup> See, e.g., *Eldred v. Ashcroft*, 537 U.S. 186, 235–36 (2003); *Baker v. Selden*, 101 U.S. 99, 102–04 (1880).

<sup>2</sup> See, e.g., *Metro-Goldwyn-Mayer Studios, Inc. v. Grokster, Ltd.*, 545 U.S. 913, 932–36 (2005) (noting that the patent law principle of inducement is applicable to copyright cases); *Sony Corp. of Am. v. Universal City Studios, Inc.*, 464 U.S. 417, 439–42 (1984) (noting that the two principles have historically been treated as similar, thus allowing for patent principles to be imposed in copyright cases).

<sup>3</sup> *Sony*, 464 U.S. at 440–42; See also *Metro-Goldwyn-Mayer Studios*, 545 U.S. at 936–37.

<sup>4</sup> *A&M Records, Inc. v. Napster, Inc.*, 239 F.3d 1004, 1026–27 (9th Cir. 2001); *DSC Commc'ns Corp. v. DGI Techs., Inc.*, 81 F.3d 597, 601 (5th Cir. 1996) (stating that "the copyright misuse defense is analogous to the patent misues defense"); *Lasercomb Am., Inc. v. Reynolds*, 911 F.2d 970, 972–77 (4th Cir. 1990) ("[S]ince copyright and patent law serve parallel public interests, a "misuse" defense should apply to infringement actions brought to vindicate either right.").

<sup>5</sup> See *Mazer v. Stein*, 347 U.S. 201, 217–18 (1954); *Bobbs-Merrill Co. v. Straus*, 210 U.S. 339, 345 (1908). See also Peter S. Menell & David Nimmer, *Unwinding Sony*, 95 CALIF. L. REV. 941, 943–44 (2007) (cautioning against blanket application of patent doctrine to copyright).

<sup>6</sup> John Shepard Wiley, Jr., *Copyright at the School of Patent*, 58 U. CHI. L. REV. 119, 119 (1991) ("[T]he two laws perform the same function. People debate whether these regimes should strive for justice for creators or economic efficiency for consumers, but no partisan recommends one goal for patent and another for copyright.").

<sup>7</sup> U.S. CONST. art. I, § 8, cl. 8 (granting Congress the power "[t]o promote the Progress of Science and [U]seful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and

intangible fruits of human creativity and innovation,<sup>8</sup> and permits owners to sue for infringement of these exclusive rights.<sup>9</sup> The two regimes have some overlapping subject matter.<sup>10</sup> These similarities have led at least one commentator to suggest that there should be one law for both regimes.<sup>11</sup>

Following the judicial trend, many commentators have applied patent doctrine to copyright law.<sup>12</sup> It is far less common among scholars, and virtually unheard of within the courts, to apply copyright doctrine to patent law.<sup>13</sup> This predominantly one-way-

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Discoveries.”).

<sup>8</sup> See 17 U.S.C. § 106 (2010) (providing copyright owners the exclusive rights to reproduction, distribution, performance, and preparation of derivative works); 35 U.S.C. § 154(a)(1) (2010) (granting patentees “the right to exclude others from making, using, offering for sale, or selling the invention.”).

<sup>9</sup> See 17 U.S.C. § 501(a) (2010) (providing the legal standards for copyright infringement); 35 U.S.C. § 271(a)-(c) (2010) (providing the legal standards for patent infringement).

<sup>10</sup> See NAT’L COMM’N ON NEW TECHNOLOGICAL USES FOR COPYRIGHTED WORKS, FINAL REPORT 9, 18–20 (1978), available at <http://digital-law-online.info/CONTU/PDF/Chapter3.pdf> [hereinafter CONTU REPORT] (stating that copyright can protect computer programs because copyright “protects the program as long as it remains fixed in a tangible medium of expression but does not protect the electro-mechanical functioning of the machine.”); *id.* at 16 (noting that patent, trade secret and unfair competition law may protect certain aspects of a computer program, but “[e]ach of these forms of protection may inhibit the dissemination of information and restrict competition to a greater extent than copyright.”).

<sup>11</sup> Wiley, *supra* note 6, at 119 (“Indeed, the obvious but largely unasked question is why we have two different laws at all, rather than a single system of innovation policy.”).

<sup>12</sup> See Orit Fischman Afori, *Implied License: An Emerging New Standard in Copyright Law*, 25 SANTA CLARA COMPUTER & HIGH TECH. L.J. 275, 276, 279 (2009) (describing the developing “implied license” doctrine in copyright as grounded in contract and patent law); Jeanne C. Fromer, *Claiming Intellectual Property*, 76 U. CHI. L. REV. 719, 721–22 (2009) (arguing for amended “claiming” standards in copyright); Mark A. Lemley, *The Economics of Improvement in Intellectual Property Law*, 75 TEX. L. REV. 989, 991–93, 1069 (1997) (arguing that copyright should include something similar to “blocking patents”); Thomas M. Susman, *Tying, Refusals to License, and Copyright Misuse: The Patent Misuse Model*, 36 J. COPYRIGHT L. SOC’Y 300, 300–01 (1989) (stating that copyright misuse is modeled after patent misuse). *Cf.* Menell & Nimmer, *supra* note 5, at 943–44 (noting that Congress had the opportunity to apply patent law to copyright law by addressing the 1952 Patent Act in the 1976 Copyright Act, but the choice not to indicate its contrary intent).

<sup>13</sup> The legal commentary arguing for application of copyright generally seeks a fair use standard in patent law. See Maureen A. O’Rourke, *Toward a Doctrine of Fair Use in Patent Law*, 100 COLUM. L. REV. 1177, 1180 (2000); Lorelei Ritchie de Larena, *What Copyright Teaches Patent Law About “Fair Use” and Why Universities Are Ignoring the Lesson*, 84 OR. L. REV. 779, 799, 802–03 (2005).

street between the two related intellectual property regimes is odd given the close relationship and many similarities between patent and copyright.

This article argues that copyright can also inform patent law. The close relationship between the regimes magnifies a critical distinguishing characteristic between the two regimes: adaptation to technological change. Copyright generally adapts relatively quickly to technological changes.<sup>14</sup> Such ready adaptation to technological change is notable, because copyright is directed at creative,<sup>15</sup> non-functional (i.e. non-technological) works of authorship.<sup>16</sup> Although copyright may protect aspects of otherwise technological works,<sup>17</sup> it is not intended to protect technological advances themselves.<sup>18</sup> Despite copyright's consistent adaptation to technology—and indeed, one of the purposes of the 1976 Copyright Act was to ensure that copyright made such adaptations more readily<sup>19</sup>—modern scholars sometimes argue against such adaptation. For example, arguments are frequently made against, or at least for narrowing, copyright's currently broad application to computer

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<sup>14</sup> See, e.g., *Sony Corp. of Am. v. Universal City Studios, Inc.*, 464 U.S. 417, 430 n.11 (1984) (discussing particular technological shifts that have resulted in legislation including player pianos and transmission of television programs by cable and microwaves systems). “From its beginning, the law of copyright has developed in response to significant changes in technology.” *Id.* at 430.

<sup>15</sup> See *Feist Publ'ns, Inc. v. Rural Tel. Serv. Co.*, 499 U.S. 340, 363 (1991) (mentioning the “creative spark required by the Copyright Act and the Constitution.”).

<sup>16</sup> See 17 U.S.C. § 102(b) (2010) (“In no case does copyright protection for an original work of authorship extend to 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 in such work.”).

<sup>17</sup> For example, copyright can protect the expression contained in a computer program. See CONTU REPORT, *supra* note 10, at 18–20; *Apple Computer, Inc. v. Franklin Computer Corp.*, 714 F.2d 1240, 1247 (3d Cir. 1983) [hereinafter *Apple Computer, Inc.*].

<sup>18</sup> See 17 U.S.C. § 102(b) (2010); *Sony*, 464 U.S. at 430 n.11 (noting that copyright has adapted to works embodied in new technologies, not the technologies themselves); CONTU REPORT, *supra* note 10, at 18–20; Dennis Karjala, *Distinguishing Patent and Copyright Subject Matter*, 35 CONN. L. REV. 439, 448–49 (2003) (describing traditional patent subject matter as “functional” and traditional copyright subject matter as “informational”).

<sup>19</sup> See H.R. REP. NO. 94-1476 at 52 (1976), *reprinted in* 1976 U.S.C.C.A.N. 5659, 5665 (stating that the purpose of the “tangible medium of expression” standard was to “avoid the artificial and largely unjustifiable distinctions, derived from cases such as *White-Smith Publishing Co. v. Apollo Co.*, 209 U.S. 1 (1908), under which statutory copyrightability in certain cases has been made to depend upon the form or medium in which the work is fixed.”).

programs,<sup>20</sup> one of the more recent technological fields that copyright has extended to.

In contrast, and counter-intuitively, technology-oriented patent law<sup>21</sup> does not adapt to technological changes as readily.<sup>22</sup> This failure to adapt occurs despite what may be characterized as ‘technology-adaptive’ doctrines, such as the “person having ordinary skill in the art,”<sup>23</sup> the doctrine of equivalents,<sup>24</sup> and the

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<sup>20</sup> See, e.g., CONTU REPORT, *supra* note 10, at 31 (arguing that forcing computer programs into the rubric of copyright “must in the long run tend to corrupt and erode the essential purposes of copyright.”); Pamela Samuelson, *CONTU Revisited: The Case Against Copyright Protection For Computer Programs in Machine-Readable Form*, 1984 DUKE L.J. 663, 672, 754-56 (1984) (arguing against the provision of copyright protection to computer programs in machine-readable form); See also Edward Lee, *Technological Fair Use*, 84 S. CAL. L. REV. 797, 798, 805, available at [http://lawweb.usc.edu/assets/docs/contribute/SCallRev83\\_4Lee.pdf](http://lawweb.usc.edu/assets/docs/contribute/SCallRev83_4Lee.pdf) (arguing that copyright is ill-equipped to handle the complexities of technology in fair use, and calling for a specialized version of fair use for technological matter).

<sup>21</sup> See, e.g., Pfaff v. Wells Elec., Inc., 525 U.S. 55, 63 (1998) (“[T]he patent system . . . encourages . . . new and useful advances in technology . . .”). See also Markman v. Westview Instruments, Inc., 517 U.S. 370, 390–91 (1996) (characterizing the creation of the Court of Appeals for the Federal Circuit as being directed toward increasing uniformity in patent law to foster technological growth and industrial innovation); Bonito Boats, Inc. v. Thunder Craft Boats, Inc., 489 U.S. 141, 150–51 (1989) (characterizing the patent system as intended to encourage “advances in technology and design”).

<sup>22</sup> See AT&T Corp. v. Excel Commc’ns, Inc., 172 F.3d 1352, 1356 (Fed. Cir. 1999) (“As this brief review suggests, this court (and its predecessor) has struggled to make our understanding of the scope of [patentable subject matter] responsive to the needs of the modern world.”); Rebecca S. Eisenberg, *The Story of Diamond v. Chakrabarty: Technological Change and the Subject Matter Boundaries of the Patent System*, in INTELLECTUAL PROPERTY STORIES 327, 327–29 (Jane C. Ginsburg & Rochelle Cooper Dreyfuss ed., 2006) (noting the difficulty patent law has had in adapting to new technologies). The debate over patent eligibility of computer programs between 1972 and 1981 is another example of the slow adaptation of patent law to technological change. See *Diamond v. Diehr*, 450 U.S. 175, 177, 192–93 (1981) (upholding patent for computer-controlled process for curing synthetic rubber); *Parker v. Flook*, 437 U.S. 584, 586–87, 596 (1978) (holding that a method for updating alarm limits by computer was not patentable); *Gottschalk v. Benson*, 409 U.S. 63, 72–73 (1972) (“[T]he creation of [computer] programs has undergone substantial and satisfactory growth . . . [and] [i]f these programs are to be patentable . . . action by Congress is needed.”).

<sup>23</sup> See Dan L. Burk & Mark A. Lemley, *Is Patent Law Technology-Specific?*, 17 BERKELEY TECH. L.J. 1155, 1156–57 (2002) (“The ‘person having ordinary skill in the art’ (PHOSITA), [is a legal construct determining obviousness and enablement which] . . . provides needed flexibility for patent law, permitting it to adapt to new technologies without losing its essential character.”).

<sup>24</sup> See *Graver Tank & Mfg. Co., Inc.’ v. Linde Air Products Co.*, 339 U.S. 605, 608 (1950) (explaining that the doctrine of equivalents may be invoked against an accused device “if it performs substantially the same function in

broad scope of patentable subject matter embodied in the 1952 Patent Act.<sup>25</sup> These adaptive doctrines did not ensure patent eligibility of computer-implemented inventions or genetically modified micro-organisms, each of which was subject to litigation before being accepted as patent subject matter.<sup>26</sup>

The subject matter question before the Supreme Court in *Bilski v. Kappos* further demonstrates the relative inflexibility of patent law.<sup>27</sup> Patent protection is supposedly intended to be granted to “anything under the sun that is made by man.”<sup>28</sup> Despite this broad protection, prior to 1998 there was a generally-recognized “exception” to patent eligibility for methods of doing business.<sup>29</sup>

In the 1998 decision *State Street Bank & Trust Co. v. Signature Financial Group, Inc.*,<sup>30</sup> the Federal Circuit rejected the business method “exception” and held that business methods are patentable so long as they produce a “useful, concrete and

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substantially the same way to obtain the same result.” and that “[t]he theory on which it is founded is that ‘if two devices do the same work in substantially the same way, and accomplish substantially the same result, they are the same, even though they differ in name, form, or shape.’”) (quoting *Union Paper-Bag Machine Co. v. Murphy*, 97 US 120, 125 (1877)); *see also* *Warner-Jenkinson Inc. v. Hilton Davis Chemical Co.*, 520 U.S. 17, 35 (1997) (noting that the applying the doctrine of equivalents is akin to determining literal infringement).

<sup>25</sup> Patent law was intended to encompass “anything under the sun that is made by man.” *Diamond v. Chakrabarty*, 447 U.S. 303, 309 (1980) (quoting S. REP. NO. 82-1979, at 5 (1952); H.R. REP. NO. 82-1923, at 6 (1952)).

<sup>26</sup> The first three cases here all addressed computer-implemented inventions. *See Diehr*, 450 U.S. at 177, 191–92; *Flook*, 437 U.S. at 585, 594–96; *Gottschalk*, 409 U.S. at 64, 71–72; *Chakrabarty*, 447 U.S. at 305, 309–10 (holding genetically modified micro-organisms as patentable).

<sup>27</sup> *Bilski v. Kappos*, 130 S. Ct. 3218, 3223, 3231 (2010) (ruling that an abstract idea termed as a “process” is not patentable).

<sup>28</sup> *Chakrabarty*, 447 U.S. at 309 (quoting S. REP. NO. 82-1979, at 5 (1952); H.R. REP. NO. 82-1923, at 6 (1952)).

<sup>29</sup> *See, e.g.*, U.S. DEP’T OF COMMERCE PATENT & TRADEMARK OFFICE, MANUAL OF PATENT EXAMINING PROCEDURE § 706.03(a) (5th ed. rev. Aug. 15 1993) [hereinafter, MPEP] (“Though seemingly within the category of a process or method, a method of doing business can be rejected as not being within the statutory classes.”); *Hotel Sec. Checking Co. v. Lorraine Co.*, 160 F. 467, 472 (2d Cir. 1908) (outlining that a system of book-keeping for a business is not patentable material); *In re Wait*, 73 F.2d 982, 982 (C.C.P.A 1934) (holding an advertising method as not patentable). *Hotel Security* is generally treated as the genesis of the business method exception. *See* Rinaldo Del Gallo, III, *Are “Methods of Doing Business” Finally Out of Business as a Statutory Rejection?*, 38 IDEA 403, 405 (1998) (noting that *Hotel Security* is viewed as the source of the business method exception).

<sup>30</sup> 149 F.3d 1368 (Fed. Cir. 1998).

tangible result.”<sup>31</sup> The Federal Circuit then abrogated that decision in *In re Bilski*,<sup>32</sup> opting instead to apply a “machine-or-transformation” test to determine the patent eligibility of a given process.<sup>33</sup> While *Bilski* did not overturn *State Street*’s holding that business methods are patentable,<sup>34</sup> its new standard is significantly more difficult for a business method to satisfy.<sup>35</sup> Such conflicting interpretations of patent law by the same court represent patent law’s inflexibility with respect to technological change.

The confusion in *Bilski* and *State Street* arises out of the fact that patent law has never fully established what its technological assumptions are.<sup>36</sup> Nor has patent law reached a viable standard for adaptation to relevant technological changes.<sup>37</sup> Copyright, by contrast, has for the most part ignored technology,<sup>38</sup> and in doing

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<sup>31</sup> *Id.* at 1375 & n.10.

<sup>32</sup> 545 F.3d 943 (Fed. Cir. 2008).

<sup>33</sup> *Id.* at 959–60 (concluding that *State Street*’s “useful, concrete and tangible result” test is “inadequate” and reaffirming that the “machine-or-transformation” test is proper).

<sup>34</sup> *Id.* at 960 (expressly reaffirming *State Street*’s conclusion “that the so-called ‘business method exception’ was unlawful and that business method claims (and indeed all process claims) are ‘subject to the same legal requirements for patentability as applied to any other process or method’”) (quoting *State St. Bank & Trust Co. v. Signature Fin. Group, Inc.*, 149 F.3d 1368, 1375–76 (1998)).

<sup>35</sup> *But see id.* at 998, 1008–11. (Mayer, J., dissenting) (arguing that while the “machine-or-transformation” test may be more difficult to satisfy in some cases, overall it will be easily circumvented by clever draftsmanship).

<sup>36</sup> *Id.* at 960 (noting that a “technological arts test” for patent law would be unclear as “‘technological arts’ and ‘technology’ are both ambiguous and ever changing”).

<sup>37</sup> Arguably, patent’s failure to address its technological assumptions and reach a viable, adaptive standard has the potential to make it obsolete in the future. See Karjala, *supra* note 18, at 439 (“If patent is to be limited to physical artifacts and their manipulation by industrial processes, it is likely to become increasingly irrelevant as we move more and more to an information-as-product economy.”). See also Richard S. Gruner, *Intangible Inventions: Patentable Subject Matter for an Information Age*, 35 LOY. L.A. L. REV. 355, 359–61 (2002) (“[I]nformation-processing innovation is at the heart of many of the most important changes now underway in our individual, social, business, and governmental activities”); R. Carl Moy, *Intellectual Property in an Information Economy: Subjecting Rembrandt to the Rule of Law: Rule-Based Solutions for Determining the Patentability of Business Methods*, 28 WM. MITCHELL L. REV. 1047, 1086 (2002) (arguing that retaining a requirement of physical transformation for method patents will make the patent system increasingly inapplicable to the information economy and will cause its replacement by other regimes of intellectual property protection).

<sup>38</sup> See COPYRIGHTS ACT, H.R. DOC. NO. 94-1476, at 51 (1976), *reprinted in* 1976 U.S.C.C.A.N. 5659, 5664 (noting that although new technology has

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so it has purchased some useful adaptability to technological change.<sup>39</sup>

This article illustrates and analyzes the different perspectives of patent and copyright law through a pair of case studies: historical accounts of video games and copyright, on the one hand, and business methods and patent on the other. Video games are characterized as a modern archetype of flexible, adaptive interpretation of intellectual property law having a positive effect on an unexpected future industry. Business methods, on the other hand, show the difficulty patent law has with adapting to technology. In light of these accounts, the article argues that courts should adopt a more flexible, adaptive stance towards patentable subject matter, one that borrows from copyright law.

In doing so, the article proceeds as follows. Part II presents a conceptual framework for the article by discussing patterns of interaction between intellectual property law and industries characterized by technological change, particularly in the patent and copyright fields. Part III presents the history of video games as a specific example of this industry/law interaction, and offers observations on the critical judicial decisions in the field. It argues that copyright law successfully adapted to legal and economic changes presented by this emerging industry. Part IV presents a similar record of the interaction between patent law and business methods. It suggests that patent law's struggle to accommodate innovation in the business method arena is rooted in the inherent inflexibility of the patent regime. Part V argues for adaptive judicial treatment of business method patents in light of the similarities between business method patents and video game copyrights. Further, Part V presents a flexible standard that may be applied to all patentable subject matter issues, and advocates abandoning the current inflexible standard rooted in "an industrial age decades removed from" the present and "link[ed] . . . to the age of iron and steel at a time of

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affected copyright law, the intent of copyright law is to protect any forms of expression that fall within its statutory mandate).

<sup>39</sup> See generally *Sony Corp. of Am. v. Universal City Studios, Inc.*, 464 U.S. 417, 457, 475–77 (1984) (Blackmun, J., dissenting) (discussing the vagueness of the fair use doctrine but noting the importance of the doctrine to copyright law); David J. Loundy, *Revising the Copyright Law for Electronic Publishing*, 14 J. MARSHALL J. COMPUTER & INFO. L. 1, 1 (1995) (discussing the malleable nature of copyright law and its ability to change in response to new mediums).

subatomic particles and terabytes.”<sup>40</sup> Importantly, the argument presented in Part V supports applying this standard regardless of the outcome of *Bilski* itself. Part VI concludes.

## II. THE LAW/INDUSTRY INTERACTION

The copyright and patent regimes are intended to interact with industry, not merely with individuals. The protection these regimes grant is intended “[t]o promote the Progress of Science and the Useful Arts,”<sup>41</sup> so their purpose is directed toward industrial outcomes. Indeed, both regimes can be traced back to industrial shifts: the modern copyright system arose as a response to changes in the publishing industry,<sup>42</sup> and the industrial roots of patent law require little elaboration.<sup>43</sup> These shifts led to the introduction of the patent and copyright regimes.

In return, the two laws are intended to directly affect industry. Patent law has been characterized as the “primary policy tool to promote innovation, encourage the development of new technologies, and increase the fund of human knowledge.”<sup>44</sup> Copyright is intended to encourage creation and public dissemination of expressive works to the benefit of society.<sup>45</sup> Just how the laws of Progress interact with industry is unclear.

This part examines the interaction of intellectual property law and industry through established rubrics of property theory.

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<sup>40</sup> *Bilski*, 545 F.3d at 1011 (Rader, J., dissenting).

<sup>41</sup> U.S. CONST. art. I, § 8, cl. 8.

<sup>42</sup> See Michael W. Carroll, *The Struggle for Music Copyright*, 57 FLA. L. REV. 907, 920–25 (2005) (discussing the emergence of the Statute of Anne, the first modern copyright statute, in response to pressure from book publishers).

<sup>43</sup> See Paul E. Schaafsma, *An Economic Overview of Patents*, 79 J. PAT. & TRADEMARK OFF. SOC’Y 241, 242–43 (1997) (“Unlike the sister rights of trademarks and copyrights, which grew out of a ‘natural rights’ philosophy, a review of the historical development of patent rights demonstrates that patents developed as a tool of economic development.”); See also FRITZ MACHLUP, 85<sup>TH</sup> CONG., AN ECONOMIC REVIEW OF THE PATENT SYSTEM 2–5 (Comm. Print 1958) (describing the history of patent law dating back to the 14th century).

<sup>44</sup> Dan L. Burk & Mark A. Lemley, *Policy Levers in Patent Law*, 89 VA. L. REV. 1575, 1576–77 (2003).

<sup>45</sup> See, e.g., *Eldred v. Ashcroft*, 537 U.S. 186, 222, 226–27 (2003) (Stevens, J., dissenting) (discussing the purposes of copyright law and noting the “twin purposes of encouraging new works and adding to the public domain”); *Sony Corp. of Am. v. Universal City Studios Inc.*, 464 U.S. 417, 429 (1984) (noting that copyright acts to motivate creative activity so as “to allow the public access to the products of their genius after the limited period of exclusive control has expired.”).

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Because scholars have wrestled with the relationships between law and other institutions in developing these rubrics, their observations can shed light on the interaction between law and industry.

The touchstone article explaining the development of property rights was published by Harold Demsetz in 1967.<sup>46</sup> Demsetz's essentially argued that property laws develop in response to market shifts.<sup>47</sup> As the value of appropriable resources increase, Demsetz argued, rights emerge around these resources, eventually resulting in the creation of market institutions to enable their exchange.<sup>48</sup>

Three "archetypal decisionmaking [sic] rules" emerged in the wake of Demsetz's theory.<sup>49</sup> First, the prevailing marketplace theory, which generally follows Demsetz's theory, is characterized by unanimous agreement among affected parties.<sup>50</sup> Second, the unitary rule occurs where a single actor controls a rights shift.<sup>51</sup> Finally, the majoritarian rule requires that a majority of the affected parties agree before a property rights shift occurs.<sup>52</sup>

Boiled down to their most basic, these rules yield three modes of interaction between law and industry. The prevailing marketplace rule yields the conclusion that legal changes occur in response to market shifts.<sup>53</sup> The unitary rule results in industrial reaction to legal shifts.<sup>54</sup> The majoritarian rule takes an intermediate stance: law and industry directly affect each other, such that they evolve contemporaneously.<sup>55</sup>

As a conceptual framework for the rest of the article, this part presents the three alternative rules of legal/industrial interaction

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<sup>46</sup> Harold Demsetz, *Toward a Theory of Property Rights*, 57 AM. ECON. REV. 347 (1967).

<sup>47</sup> *See id.* at 350 ("It is my thesis . . . that the emergence of new property rights takes place in response to the desires of the interacting persons for adjustment to new benefit-cost possibilities.").

<sup>48</sup> *Id.* at 356–57.

<sup>49</sup> Katrina Miriam Wyman, *From Fur to Fish: Reconsidering the Evolution of Private Property*, 80 N.Y.U. L. REV. 117, 127–31 (2005).

<sup>50</sup> *See id.* at 127–32.

<sup>51</sup> *Id.* at 131.

<sup>52</sup> *Id.*

<sup>53</sup> *See* Demsetz, *supra* note 46, at 350–53 (noting that hunting was carried out primarily for food and clothing purposes prior to the establishment of the fur trade, but that increased hunting provided the necessary incentive for the creation of property rights); *See infra* Part II.A.

<sup>54</sup> *See infra* Part II.B.

<sup>55</sup> *See infra* Part II.C.

derived from the property rules introduced above. Section A presents the possibility that the evolution of law occurs in response to changes in industry. This rule follows closely the Demsetzian prevailing marketplace view. Section B presents the opposite, demonstrating that industry may follow the law. This rule resembles the unitary rule. Finally, Section C shows that law and industry may evolve together – something akin to the majoritarian rule. Each section offers observations based on historical examples.

### A. *The Law Adapts to Industry*

Demsetz derived his property rights argument from the way such rights arose in Native American cultures involved in the fur trade.<sup>56</sup> His most basic point essentially stated that legal shifts occur in response to industrial changes. The copyright and patent laws provide several historical examples of this kind of interaction.

Copyright's historic adaptive stance towards new technology<sup>57</sup> provides several examples of the law's adaptation to industrial change. The copyright doctrine of fair use inherently follows industry due to its vagueness.<sup>58</sup> The "fair use analysis must always be tailored to the individual case,"<sup>59</sup> so it is necessarily a reactive doctrine, although trends have arisen in court decisions in certain "industry" scenarios.<sup>60</sup> Some technology-specific industries also evidence legal adaptation to the market place. Xerox machines, cable television, and VCRs, for example, have

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<sup>56</sup> Demsetz, *supra* note 46, at 352.

<sup>57</sup> *Sony Corp. of Am. v. Universal City Studios, Inc.*, 464 U.S. 417, 430 (1984) ("From its beginning, the law of copyright has developed in response to significant changes in technology.").

<sup>58</sup> *Id.* at 457, 475–76 (Blackmun, J., dissenting) (discussing the lack of concrete criteria associated with the fair use doctrine).

<sup>59</sup> *Harper & Row Publishers, Inc. v. Nation Enters.*, 471 U.S. 539, 552 (1985).

<sup>60</sup> For example, commercial photocopying, even for educational purposes, is generally found not to be fair use. *See Princeton Univ. Press v. Mich. Document Servs., Inc.*, 99 F.3d 1381, 1385–87, 1391 (6th Cir. 1996); *Am. Geophysical Union v. Texaco, Inc.*, 60 F.3d 913, 915–20, 931 (2nd Cir. 1994); *Television Digest, Inc. v. U.S. Tel. Ass'n*, 841 F. Supp. 5, 9–10 (D.D.C. 1993); *Basic Books Inc. v. Kinko's Graphics Corp.*, 758 F. Supp. 1522, 1529–36, 1547 (S.D.N.Y. 1991). "Parody" of a prior work, on the other hand, is generally found to be fair use. *See Campbell v. Acuff-Rose Music, Inc.*, 510 U.S. 569, 572, 576–80 (1994); *SunTrust Bank v. Houghton Mifflin Co.*, 268 F.3d 1257, 1259, 1267–71 (11th Cir. 2001).

each led to changes in copyright law.<sup>61</sup> Perhaps the best example of such change is an industry where protection under copyright laws is viewed as a given today, but which was apparently not even considered at the inception of copyright law.

The first modern-day copyright statute—the Statute of Anne—”was invented to solve a particular problem for book publishers.”<sup>62</sup> At the time the Statute was enacted, 1710, the concept of author’s rights did not clearly extend to some present-day forms of expression, including musical works.<sup>63</sup> Most professional musicians and composers were employed directly by the wealthy.<sup>64</sup> Slowly and apparently unrelated to the Statute, public concerts and musical festivals became more popular throughout the 18<sup>th</sup> century.<sup>65</sup> The popularity of live performances led to a growth in the market for printed music.<sup>66</sup> Despite the objections of music publishers,<sup>67</sup> printed music was eventually accepted under the Statute of Anne.<sup>68</sup>

Johann Christian Bach, the youngest son of Johann Sebastian Bach,<sup>69</sup> was a popular composer who obtained a printing privilege from the English Crown for his music.<sup>70</sup> After coming into conflict with the publishing firm Longman & Lukey, Bach brought suit under his printing privilege and eventually under the Statute of Anne.<sup>71</sup> The Chancellor certified to the King’s Bench the question of whether musical compositions were “within” the Statute of Anne, and the Bench found that they were.<sup>72</sup>

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<sup>61</sup> See generally *Sony*, 464 U.S. at 430 & n.11, 431, 446–56, 463 (explaining how copyright law has changed because of the introduction of new technology, and holding that home video tape recorders do not infringe upon copyrights).

<sup>62</sup> Carroll, *supra* note 42, at 910, 920–25.

<sup>63</sup> *Id.* at 929–30, 934–35.

<sup>64</sup> See SIMON McVEIGH, CONCERT LIFE IN LONDON FROM MOZART TO HAYDN 203 (1993) (characterizing British musicians as “dependent at every turn on patrons’ support and approval”); DEBORAH ROHR, THE CAREERS OF BRITISH MUSICIANS, 1750-1850: A PROFESSION OF ARTISANS 44-61 (2001) (discussing patronage in eighteenth-century England).

<sup>65</sup> Carroll, *supra* note 42, at 926–27.

<sup>66</sup> *Id.* at 927.

<sup>67</sup> *Id.* at 929–30 (“In contrast to professional musicians and their equivocal response to the Statute of Anne, music publishers appear to have been hostile toward music copyright.”).

<sup>68</sup> *Id.* at 912.

<sup>69</sup> *Id.* at 942.

<sup>70</sup> David Hunter, *Music Copyright in Britain to 1800*, 67 MUSIC & LETTERS 269, 277–79 (1986).

<sup>71</sup> Carroll, *supra* note 42, at 943–44.

<sup>72</sup> *Bach v. Longman*, (1777) 98 Eng. Rep. 1274, 1275–76.

Although it is unclear if other composers benefited immediately from the *Bach* decision,<sup>73</sup> it is clear that composers had begun to rely on new markets to support their art.<sup>74</sup> And so, the *Bach* decision and its progeny—eventually including the copyright of music—may be characterized as legal reaction to change in the music industry.

A seminal patent law case, *Diamond v. Chakrabarty*,<sup>75</sup> represents a major legal shift in light of a changing industrial climate. Ananda Chakrabarty developed a genetically modified bacterium capable of breaking down crude oil.<sup>76</sup> The question at the Supreme Court was “whether a liv[ing], human-made micro-organism [was] patentable subject matter under 35 U.S.C. § 101.”<sup>77</sup>

The case was heard twice at the Court of Customs and Patent Appeals (CCPA)<sup>78</sup> before the Supreme Court granted certiorari. The subject matter of Chakrabarty’s patent was not unknown in the patent system; methods of producing antibiotics from microbes and microbial processes for waste treatment had existed for decades.<sup>79</sup> The questionable aspect of Chakrabarty’s patent application was his claim to the bacteria themselves.<sup>80</sup> This product’s patent eligibility was supported by market changes prior to the decision.

Recombinant DNA techniques were invented in the early 1970s.<sup>81</sup> While gene-splicing was met with public and scientific consternation at its birth,<sup>82</sup> the concerns of scientists had

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<sup>73</sup> Carroll, *supra* note 42, at 945.

<sup>74</sup> *Id.* at 957 (“[T]he result in *Bach* should be viewed positively because composers had begun to rely on market exchange and self-publication to support their art, and the extension of copyright marginally improved their ability to compose independently of their patron’s desires.”).

<sup>75</sup> 447 U.S. 303 (1980).

<sup>76</sup> *Id.* at 305; Eisenberg, *supra* note 22, at 327.

<sup>77</sup> *Diamond*, 447 U.S. at 305.

<sup>78</sup> *Id.* at 306–07. The CCPA was the predecessor court to the Federal Circuit. The Circuit was intended to consolidate patent appeals in one court. See generally Federal Courts Improvement Act of 1982, Pub. L. No. 97–164, 96 Stat. 25; S. REP. NO. 97–275, at 2 (1981), reprinted in 1982 U.S.C.C.A.N. 11, 12.

<sup>79</sup> See Eisenberg, *supra* note 22, at 333 & n.31 (referencing *In re Mancy*, “upholding patent claims to process of making antibiotic by cultivating strain of bacteria”); *City of Milwaukee v. Activated Sludge, Inc.* 69 F.2d 577, 579, 588–89 (7th Cir. 1934) (validating several patents regarding a method of treating raw sewage).

<sup>80</sup> Eisenberg, *supra* note 22, at 333–34.

<sup>81</sup> *Id.* at 339.

<sup>82</sup> See Judith P. Swazey, James R. Sorenson & Cynthia B. Wong, *Risks and Benefits, Rights and Responsibilities: A History of the Recombinant DNA*

subsided by the time *Chakrabarty* was litigated.<sup>83</sup> As concerns over gene-splicing faded, it became apparent that the industry could be incredibly valuable. The *Washington Post* characterized the case as “represent[ing] a potential gold mine for corporations involved in genetic engineering research.”<sup>84</sup> Even the lone *amicus* brief filed against *Chakrabarty* noted that patents like the one at issue “would significantly contribute to the profit potential of the genetic industry, thus generating a greater momentum in research and development of genetic engineering technologies,” resulting in a “rapid proliferation of genetic techniques in . . . many other aspects of the nation’s economic life.”<sup>85</sup> This growth in industrial support for a field once viewed with consternation provided the necessary incentive for courts to expand patent law to ensure that such technologies were protected in the future.

Generally, it appears that law only adapts to industrial change over time. Such a change could occur more quickly in the case of certain disruptive technologies,<sup>86</sup> but such circumstances appear rare. In either circumstance, as in Demsetz’s rule, sufficient market forces appear to be the driving factor in causing a shift in legal standards.<sup>87</sup>

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*Research Controversy*, 51 S. CAL. L. REV. 1019, 1019 (1978) (recounting conference of molecular biologists addressing concerns over recombinant DNA research).

<sup>83</sup> See Daniel J. Kevles, *Ananda Chakrabarty Wins a Patent: Biotechnology, Law, and Society, 1972-1980*, 25 HIST. STUD. IN THE PHYSICAL & BIOLOGICAL SCI. 111, 121 (1994) (“By 1978, most molecular biologists were convinced that the dangers [of recombinant DNA] had been exaggerated.”).

<sup>84</sup> Austin Scott, *Court Rules GE Can Patent Life Created in Lab: GE May Patent New Life Form*, WASH. POST, Mar. 3, 1978, at A1.

<sup>85</sup> Brief on Behalf of the People’s Business Commission as Amicus Curiae Supporting Petitioners at 3 *Diamond v. Chakrabarty*, 447 U.S. 303 (1980) (No. 79-136).

<sup>86</sup> For example, the technology in *Sony* was relatively new, yet the *Sony* decision had a profound impact on industry. See generally JAMES LARDNER, *FAST FORWARD: HOLLYWOOD, THE JAPANESE, AND THE ONSLAUGHT OF THE VCR* 168–69, 171–72 (1st ed. 1987) (discussing how the movie industry adapted to the *Sony* decision by creating a profitable aftermarket). See also *Diamond v. Chakrabarty*, 447 U.S. 303, 317 n.11 (1980) (acknowledging that the political branches have responded to the problems of genetic research and technology).

<sup>87</sup> See PAUL GOLDSTEIN, *COPYRIGHT’S HIGHWAY: FROM GUTENBERG TO THE CELESTIAL JUKEBOX* 7 (1st ed. 1994) (“[T]he marketplace will determine whether a work has commercial value . . . . [I]f the work has commercial value, copyright’s aim is to put that value in the copyright owner’s pocket.”).

*B. Industry Adapts to the Law*

Alternatively, industry may adapt to changes in the law. This is especially true where decision-making authority is concentrated in one or few actors, as in the unitary rule.<sup>88</sup> The Supreme Court or Congress can act as unitary decision-makers in the patent and copyright fields, and the Federal Circuit frequently acts as a unitary decision-maker in the patent field.<sup>89</sup> Because the legal shift originates from a single actor, participants in affected markets must adapt their actions to the legal shift. Therefore, where significant authority is concentrated in few actors, industrial shifts will likely occur in response to legal changes.

In copyright, industrial adaptation tends to occur through the exploitation of narrow legal rules. Professor Jessica Litman points to several industries that evolved in response to such narrow changes in copyright law.<sup>90</sup> For example, “[a]n enterprising group of talking machine manufacturers used the copyright exemption for the performance of musical compositions on coin-operated devices to launch the jukebox industry.”<sup>91</sup> Such legal shelters also led to industries oriented around specific technologies like player pianos<sup>92</sup> and phonograph records.<sup>93</sup> They

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<sup>88</sup> See *supra* notes 51–54 and accompanying text.

<sup>89</sup> See *Markman v. Westview Instruments Inc.*, 517 U.S. 370, 390 (1996) (“It was just for the sake of such desirable uniformity that Congress created the Court of Appeals for the Federal Circuit as an exclusive appellate court for patent cases.” (citing H.R. REP. NO. 97–312, at 20–23 (1981))).

<sup>90</sup> JESSICA LITMAN, DIGITAL COPYRIGHT 21 n.21, 106 (2001) (noting that the jukebox industry arose in light of the exemption accorded to “the reproduction or rendition of a musical composition by or upon coin-operated machines.”). “History teaches that whenever we have discovered or enacted a copyright exception, an industry has grown up within its shelter.” *Id.* at 106. *Second Supplementary Register’s Report on the General Revision of the U.S. Copyright Law 1975 Revision Bill: Hearing Before the Subcomm. on Courts, Civil Liberties & the Admin. of Justice of the H. Comm. on the Judiciary*, 94th Cong. 285–87 (1975) [hereinafter *Second Supplementary Register’s Report Hearing*] (statement of Barbara Ringer, Register of Copyrights in the Copyright Office of the Library of Congress) (discussing the Copyright Act’s exemption for jukeboxes from paying royalties to song owners because the playing of the song is not a public performance).

<sup>91</sup> LITMAN, *supra* note 90, at 49.

<sup>92</sup> See *Kennedy v. McTammany*, 33 F. 584, 584 (C.C.D. Mass. 1888) (describing the perforated sheets of paper used in player pianos as mechanical and not subject to copyright); *White-Smith Music Publ’g. Co. v. Apollo Co.*, 209 U.S. 1, 18 (1908) (holding that perforated rolls used in player pianos are not “within the meaning of the copyright act”).

<sup>93</sup> LITMAN, *supra* note 90, at 106 (“[P]honograph records superseded both

have also contributed to more general industries; the video tape rental industry, for one, arose thanks to the first sale doctrine.<sup>94</sup> Notably, it was predicted that this industry would cause irreparable harm to the television and motion picture industries—an outcome that never came to pass.<sup>95</sup>

Patent law provides several examples of industrial reaction to specific legal shifts. Only the judicially-created patent doctrine of experimental use<sup>96</sup> is examined here. The doctrine is rooted in the Supreme Court case *City of Elizabeth v. American Nicholson Pavement Co.*<sup>97</sup> and its progeny.<sup>98</sup> *City of Elizabeth* arose out of Nicholson's suit for infringement of his pavement patent.<sup>99</sup> The City of Elizabeth argued that Nicholson's patent was invalid, because it was in public use for six years prior to Nicholson's

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piano rolls and sheet music with the aid of the compulsory license for mechanical reproductions"). See also Copyright Act, ch. 120, Pub. L. No. 60–349, 35 Stat. 1075, 1075–76 (1909) (describing the legal shelter for jukeboxes under copyright law); *Second Supplementary Register's Report Hearing*, *supra* note 90, at 239, 242–44 (statement of Barbara Ringer, Register of Copyrights in the Copyright Office of the Library of Congress) (explaining the compulsory license specially created for the copyright of phonorecords in order to prevent large recording companies from acquiring monopolies).

<sup>94</sup> LITMAN, *supra* note 90, at 106. First sale doctrine allows the owner of a copy of a copyrighted work to dispose of that copy as he or she pleases. See 17 U.S.C. § 109 (2010).

<sup>95</sup> LITMAN, *supra* note 90, at 106–07. See also *Video and Audio Home Taping: Hearing on S. 31 and S. 175 Before the Subcomm. on Patents, Copyrights, and Trademarks of the S. Comm. on the Judiciary*, 98th Cong. 276–78 (1983) (statement of Jack Valenti, President, Motion Picture Association of America) (expressing the Motion Picture Association of America's concern regarding the impact of in home VCR recordings on motion picture and television); *id.* at 307–09 (statement of Kay Peters, Chairman, Telecomms. Policy Comm., Screen Actors' Guild) (voicing the apprehension of the Screen Actor's Guild toward allowing in home movie recordings that are not subject to copyright laws); *Home Recording of Copyrighted Works: Hearings on H.R. 4783, H.R. 4794, H.R. 4808, H.R. 5250, H.R. 5488, and H.R. 5705 Before the Subcomm. on Courts, Civil Liberties and the Admin. of Justice of the H. Comm. on the Judiciary*, 97th Cong. (1982) (testimony of Jack Valenti, President, Motion Picture Association of America) (explaining the fear that the ability to record on VCRs will damage the film industry).

<sup>96</sup> There are two doctrines of experimental use in patent law—one as an exception to the on sale bar, and the other as a narrow defense to infringement. See Burk & Lemley, *supra* note 44, at 1646–47.

<sup>97</sup> 97 U.S. 126 (1877).

<sup>98</sup> See, e.g., *Pfaff v. Wells Elecs.*, 525 U.S. 55, 64 (1998) (“[A]n inventor who seeks to perfect his discovery may conduct extensive testing without losing his right to obtain a patent for his invention—even if such testing occurs in the public eye.”).

<sup>99</sup> *City of Elizabeth*, 97 U.S. at 128–29.

application for a patent.<sup>100</sup> Upholding the patent's validity, the Court recognized that some inventions necessarily require public testing and in such cases, a necessary public use is still experimental, and does not bar patent eligibility.<sup>101</sup>

Under the experimental use doctrine, certain industries tend to use substantial public testing while others do not.<sup>102</sup> Software, for example, often undergoes "beta-testing" before, and frequently after, commercial release.<sup>103</sup> Meanwhile, some industries can perform all necessary testing in private. Pharmaceutical and chemical inventions can usually be tested in laboratories without release to the public.<sup>104</sup> How each industry treats its experimentation is at least in part a reaction to the experimental use exception.

### *C. Law and Industry Evolve Simultaneously*

The final evolutionary rubric is an intermediary rule between the law or industry extremes.<sup>105</sup> As such, it represents a system where neither legal nor industrial changes dictate shifts in the other field. Instead, both fields evolve simultaneously. The result is that, whereas the prevailing marketplace and unitary rules can be supported by examination of specific legal rules and events closely related to the advent of those rules, broader examination is necessary to analyze interactions when evolution occurs simultaneously.

A broader examination of the history of printed music provides

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<sup>100</sup> *Id.* at 129.

<sup>101</sup> *Id.* at 135.

[I]f used under the surveillance of the inventor, and for the purpose of enabling him to test the machine, and ascertain whether it will answer the purpose intended, and make such alterations and improvements as experience demonstrates to be necessary, it will still be a mere experimental use, and not a public use, within the meaning of the statute.

*Id.* See also Burk & Lemley, *supra* note 44, at 1647 ("[P]atent applicants do not trigger the one-year statutory bar if their use or sale is part of a bona fide experiment.").

<sup>102</sup> Burk & Lemley, *supra* note 44, at 1648 ("[Experimental use does] not expressly differ by industry, but for obvious reasons [it is] more likely to be applied in industries where reproduction and testing of products are necessary parts of the product development process.").

<sup>103</sup> *Id.*

<sup>104</sup> *Id.*

<sup>105</sup> Just as the majoritarian rule is an intermediary between the unitary and prevailing marketplace theories. See Wyman, *supra* note 49, at 130–31; *Supra* text accompanying notes 51–55.

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an instructive copyright example. Recall that prior to *Bach v. Longman*<sup>106</sup> in 1777, musicians in London began to take advantage of new markets for their music.<sup>107</sup> Despite market changes before the *Bach* decision, relatively few musicians or publishers filed their works at the Stationer's Hall—only 175 music titles were registered between 1700 and 1779.<sup>108</sup> Between 1780 and 1789, 738 works were registered, and that number doubled between 1790 and 1799.<sup>109</sup> This evidence shows that, while the *Bach* decision may have been a legal reaction to industrial change, industry also reacted to the legal shift that *Bach* embodied.

The *Chakrabarty* decision is characterized above as a legal reaction to a major industrial shift,<sup>110</sup> but the case also resulted in a major industrial reaction. As predicted,<sup>111</sup> investment in biotechnology research and development has flourished since the decision.<sup>112</sup>

#### *D. Summary*

Without making any claims as to which rule is best, this article presumes that law and industry have evolved together. While in some scenarios, industry may exclusively follow law, or vice versa, parts II through V presume that law and industry evolve simultaneously. This presumption is applied because the article addresses subject matter issues, and subject matter issues appear to have more complicated interactions with the law than other issues.

With the foregoing framework in mind, the following parts discuss two law and industry interactions in much greater detail. Part III presents a historical account of the interaction between

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<sup>106</sup> (1777) 98 Eng. Rep. 1274.

<sup>107</sup> See Carroll, *supra* note 42, at 926–27 (noting that, as public performances became more commonplace, demand for printed music increased). See also *supra* Part II.A (discussing the growth of the market for printed music).

<sup>108</sup> Hunter, *supra* note 70, at 281 tbl.1. Records show that, between 1700 and 1779, 175 music titles were registered at the Stationer's Hall under the Statute of Anne. *Id.*

<sup>109</sup> *Id.*

<sup>110</sup> See *supra* Part II.A.

<sup>111</sup> See Scott, *supra* note 84, at A1; Brief on Behalf of the People's Business Commission as Amicus Curiae Supporting Petitioners at 3 *Diamond v. Chakrabarty*, 447 U.S. 303 (1980) (No. 79-136).

<sup>112</sup> Eisenberg, *supra* note 22, at 357.

copyright law and the video game industry. Part IV provides a similar account of the interaction between patent law and the business method industry.

### III. COPYRIGHT LAW AND THE VIDEO GAME INDUSTRY

The video game industry is a particularly intriguing study because the industry appears to have been largely unforeseen when its governing laws were drafted.<sup>113</sup> The extension of copyright protection to computer programs, where video games have their roots, had been hotly debated since before the 1976 Copyright Act, and has continued to be a point of contention in copyright scholarship.<sup>114</sup> Because it was not at all clear that copyright should extend to computer programs, the interaction between law and industry is particularly important in understanding why such rights came to be.

This part proceeds as follows. First, section A provides a synopsis of the law as it applies to video games. This section concentrates on the law as it applies to the programming in video games; it does not examine video games as audiovisual or other works in depth. Second, section B provides a historical account of the video game industry and its technological predecessors. It also discusses external legal issues that may have had an impact on the video game industry. Section C offers observations as to how and why copyright protection was extended to the video game industry. Section C also notes some likely unexpected results of this extension.

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<sup>113</sup> A broad search across several applicable Westlaw databases yielded four references between 1955 and 1975 with the words “computer” or “video” within the same sentence as “game” and restricted to text only. Only one is not a case, a reference that contains an argument for computer simulation in legal applications. John N. Drobak, Note, *Computer Simulation and Gaming: An Interdisciplinary Survey with a View Toward Legal Applications*, 24 STAN. L. REV. 712, 712 (1972). The databases searched include case law (ALLCASES), legal periodicals (JLR), and legislative history (LH). The three cases are: *Am. Basketball Ass’n v. AMF Voit, Inc.*, 358 F. Supp. 981 (S.D.N.Y. 1973) (discussing trademark infringement); *State ex rel. Little Beaver Theatre, Inc. v. Tobin*, 258 So.2d 30 (Fla. Dist. Ct. App. 3d 1972) (dealing with obscenity); and *Peachey v. Boswell*, 167 N.E.2d 48 (Ind. 1960) (discussing a pinball machine).

<sup>114</sup> See, e.g., Stephen Breyer, *The Uneasy Case for Copyright: A Study of Copyright in Books, Photocopies, and Computer Programs*, 84 HARV. L. REV. 281, 344–50 (1970) (arguing against provision of copyright protection to computer programs); Samuelson, *supra* note 20, at 705–06 (arguing against the provision of copyright protection to computer programs in machine-readable form).

### A. Copyright Law as it Applies to Video Games

At the output end, video games are audiovisual works, which the law readily protects.<sup>115</sup> The audiovisual aspects of video games do not need to be fixed or recorded “exactly as [they are] perceived by the human eye.”<sup>116</sup> So long as the audiovisual work can be reproduced, it qualifies for copyright protection.<sup>117</sup>

Games may also contain specific copyrightable content such as characters<sup>118</sup> or plots.<sup>119</sup> Like audiovisual aspects of video games, these issues exist at the “back-end” of the video game—the end which the video game player interacts with. The true legal question lies at the front end—in the programming.

The 1976 Copyright Act appeared to extend protection to computer programs, and thus to video games. The Act protected “literary works,”<sup>120</sup> which were defined as “works . . . expressed in words, numbers, or other verbal or numerical symbols or indicia, regardless of the nature of the material objects . . . in which they are embodied.”<sup>121</sup> The legislative history further suggested that computer programs fell within this definition.<sup>122</sup> The Act also

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<sup>115</sup> See *Midway Mfg. Co. v. Artic Int'l, Inc.*, 547 F. Supp. 999, 1006–08, 1011–13 (N.D. Ill. 1982) (holding that audiovisual works contained in a video game are copyrightable).

<sup>116</sup> *Id.* at 1007–08.

<sup>117</sup> *Id.* See also 17 U.S.C. § 102(a) (2010) (requiring only that a work may be “reproduced . . . with the aid of a machine or device” as part of qualifying for copyright protection).

<sup>118</sup> See *Metro-Goldwyn-Mayer, Inc. v. Am. Honda Motor Co., Inc.*, 900 F. Supp. 1287, 1293, 1296–97 (C.D. Cal. 1995) (determining that the James Bond character is copyrightable in granting a preliminary injunction); *Anderson v. Stallone*, 11 U.S.P.Q.2d (BNA) 1161, 1165–67 (C.D. Cal. 1989) (determining that the Rocky characters are protected by copyright); see also *New Line Cinema Corp. v. Bertlesman Music Grp., Inc.*, 693 F. Supp. 1517, 1521 n.5 (S.D.N.Y. 1988) (“Because New Line has valid copyrights in the Nightmare [on Elm Street film] series, it is clear that it has acquired copyright protection as well for the character of Freddy.”) (emphasis added).

<sup>119</sup> See, e.g., *Nichols v. Universal Pictures Corp.*, 45 F.2d 119, 121 (2d Cir. 1930) (noting that protection of a literary work “cannot be limited literally to the text,” and that plot may be infringed); *Stodart v. Mutual Film Corp.*, 249 F. 507, 509–10 (S.D.N.Y. 1917) (finding that the plot of a play was infringed when copied by a film almost in its entirety).

<sup>120</sup> 17 U.S.C. § 102(a)(1).

<sup>121</sup> *Id.* § 101.

<sup>122</sup> See H.R. REP. NO. 94–1476 at 54 (1976), reprinted in 1976 U.S.C.C.A.N. 5659, 5667 (“The term ‘literary works’ does not connote any criterion of literary merit or qualitative value: it includes . . . computer programs to the extent that they incorporate authorship in the programmer’s expression of original

included a “status quo” provision limiting the effect the new statute had upon computer program copyrights.<sup>123</sup>

Congress established the Commission on New Technological Uses of Copyrighted Works (CONTU) prior to the enactment of the 1976 Act in order to address, among other things, the issues relating to computer program copyrights.<sup>124</sup> CONTU concluded that computer programs are “writings” protected by the Constitution,<sup>125</sup> and that copyright was the least restrictive means of protecting programs.<sup>126</sup> The majority drew the line between copyrightable subject matter and potentially patentable subject matter:<sup>127</sup> copyright “protects the program so long as it remains fixed in a tangible medium of expression, but does not

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ideas, as distinguished from the ideas themselves.”).

<sup>123</sup> Copyrights Act, Pub. L. No. 94–553, 90 Stat. 2565 (1976). The 1976 Act’s § 117 stated:

Notwithstanding the provisions of sections 106 through 116 and 118, this title does not afford to the owner of copyright in a work any greater or lesser rights with respect to the use of the work in conjunction with automatic systems capable of storing, processing, retrieving, or transferring information, or in conjunction with any similar device, machine, or process, than those afforded to works under the law, whether title 17 or the common law or statutes of a State, in effect on December 31, 1977, as held applicable and construed by a court in an action brought under this title.

*Id.*

<sup>124</sup> Act of Dec. 31, 1974, Pub. L. No. 93–573, 88 Stat 1873 (1974) (establishing CONTU); *See also* JULIE E. COHEN, ET AL., COPYRIGHT IN A GLOBAL INFORMATION ECONOMY 236 (Aspen Publishers 2d ed. 2006) (explaining how Congress established CONTU).

<sup>125</sup> *See* CONTU REPORT, *supra* note 10, at 15 (noting that a program is created in a manner similar to “a novel, poem, play, musical score, blueprint, advertisement, or telephone directory . . . [and that] all these works are writings in the constitutional sense and eligible for copyright if Congress so provides”).

<sup>126</sup> *Id.* at 16–18 (noting that patent, trade secret or unfair competition “may inhibit the dissemination of information and restrict competition to a greater extent than copyright”).

<sup>127</sup> CONTU noted that the Supreme Court had considered three cases involving computer programs, and had found the programs ineligible for patent protection in each case. *Id.* at 17. *See* Parker v. Flook, 437 U.S. 584, 593–95 (1978) (deciding that a program that updated alarm limits on catalytic converters was not patentable when there was already a method for determining alarm limits); Dann v. Johnston, 425 U.S. 219, 227–28 (1976) (deciding that a program that would provide bank customers with a detailed statement of their expenditures would not be patentable on the grounds of obviousness); Gottschalk v. Benson, 409 U.S. 63, 68, 71–73 (1972) (deciding that a program that converted binary-coded-decimal numerals into pure binary numerals could not be patented when the only application would be for use with a digital computer).

protect the electromechanical functioning of a machine.”<sup>128</sup>

In response to CONTU’s findings, Congress made two amendments to the Copyright Act in 1980. Section 117 was repealed and replaced,<sup>129</sup> and the definition of “computer program” was added to § 101.<sup>130</sup> But even after the 1980 amendment, courts found it difficult to apply copyright protection to computer programs.<sup>131</sup>

As the law settled, computer programs were granted copyright protection in virtually any language or form of fixation.<sup>132</sup> Shortly after 1980, though, questions revolved around distinctions between source code and object code as well as application and operating system programs.<sup>133</sup> Source code, or

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<sup>128</sup> CONTU REPORT, *supra* note 10, at 20. CONTU also noted that “[t]he way copyright affects games and game-playing is closely analogous: one may not adopt and republish or redistribute copyrighted game rules, but the copyright owner has no power to prevent others from playing the game.” *Id.* See also *id.* at 10 (noting that programs could be stored on “plug boards, punched paper cards and tape, magnetic tapes and disks, and semiconductor chips . . . [but this] reflect[s] differences only in the media in which programs are stored and not in the nature of the programs themselves”).

<sup>129</sup> See 17 U.S.C. § 117 (2010) (providing special limitations on the exclusive rights in computer programs).

<sup>130</sup> 17 U.S.C. § 101 (“A ‘computer program’ is a set of statements or instructions to be used directly or indirectly in a computer in order to bring about a certain result.”).

<sup>131</sup> See, e.g., *Apple Computer, Inc. v. Franklin Computer Corp.*, 714 F.2d 1240, 1246–48 (3d Cir. 1983) (deciding whether computer programs in object code are protected by copyright). The court in *Apple* reversed the district court’s holding that object code is not copyrightable based on another circuit court decision. *Id.* See also *Williams Elecs., Inc. v. Artic Int’l, Inc.*, 685 F.2d 870, 871–74, 876–77 (3d Cir. 1982) (deciding whether computer programs in source code are protected by copyright); Samuelson, *supra* note 20, at 705–06, 736–41, 769 (arguing against copyright protection of machine-readable computer programs); *Data Cash Sys., Inc. v. JS & A Grp., Inc.*, 480 F. Supp. 1063, 1068 (N.D. Ill. 1979), *aff’d on other grounds*, 628 F.2d 1038, (7th Cir. 1980) (holding that object code in ROM is not copyright protected).

<sup>132</sup> See *Apple Computer, Inc.*, 714 F.2d at 1246–47, 1249 (holding that source and object code are copyrightable, that object code embodied in ROM is protected, and noting that the law does not distinguish between operating or application programs).

<sup>133</sup> The fact that these areas were unclear is evidenced by the litigation of the early 1980s involving computer programs. See *Apple Computer, Inc.*, 714 F.2d at 1242, 1248–50 (rejecting the district court’s distinction between source code and object code, as well as defendant’s argument that operating system programs are “per se” not copyrightable); *Williams*, 685 F.2d at 876–77, 877 n.8 (rejecting defendant’s argument that source code is copyrightable while object code is not); *Midway Mfg. Co. v. Artic Int’l, Inc.*, 547 F. Supp. 999, 1012–15 (refusing to adopt defendant’s assertion that the court should follow the ruling in *Data Cash Systems*, and granting a preliminary injunction to prevent defendant from infringing on copyrights); *Tandy Corp. v. Personal Micro*

code written in a human-readable programming language, differs from object code, which is what a computer “reads.”<sup>134</sup> Application programs direct computers to perform a specific function, while operating systems assist with the general operation of a computer.<sup>135</sup>

The two seminal cases on these issues were both handed down by the Third Circuit. In the first, *Williams Electronics, Inc. v. Artic Int'l, Inc.*,<sup>136</sup> the plaintiff held copyrights on the DEFENDER video game.<sup>137</sup> The Defendant sold circuit boards that contained a program virtually identical to DEFENDER.<sup>138</sup> The second, *Apple Computer, Inc. v. Franklin Computer Corp.*,<sup>139</sup> saw the defendants copy fourteen of the plaintiff's operating system programs.<sup>140</sup> These programs were apparently the easiest way for the defendant to achieve compatibility with the plaintiff's computers.<sup>141</sup>

*Williams* held that computer programs are broadly protected by copyright.<sup>142</sup> *Williams* further held that the Copyright Act protects computer programs embodied in any form of fixation.<sup>143</sup> *Apple* expanded and clarified the *Williams* decision. *Apple* noted that, while *Williams* addressed only programs written in source code, the Copyright Act did not distinguish between types of code.<sup>144</sup> *Apple* also settled the last issue *Williams* left open, holding that operating system programs are also protected by

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Computers, Inc., 524 F. Supp. 171, 174–75 (N.D. Cal. 1981) (holding that computer programs are copyrightable, despite recognizing that other courts had gone the other way on the issue); *Data Cash Systems*, 480 F. Supp. at 1068–69 (holding that plaintiff's suit be dismissed since “ROM is not a ‘copy’ of plaintiff's computer program”).

<sup>134</sup> *Apple Computer, Inc.*, 714 F.2d at 1243.

<sup>135</sup> *Id.* at 1243–44.

<sup>136</sup> 685 F.2d 870 (3d Cir. 1982).

<sup>137</sup> *Id.* at 872.

<sup>138</sup> *Id.* at 872–73.

<sup>139</sup> 714 F.2d 1240 (3d Cir. 1983).

<sup>140</sup> *Id.* at 1243–45.

<sup>141</sup> *See id.* at 1243 (“Franklin's copying of Apple's operating system computer programs in an effort to achieve such compatibility precipitated this suit.”).

<sup>142</sup> *Williams Elecs., Inc. v. Artic Int'l, Inc.*, 685 F.2d 870, 877 (3d Cir. 1982) (noting that the interpretation of the legislative history indicates that the language of the copyright statutes should be broadly interpreted).

<sup>143</sup> *Id.* (“A ‘copy’ is defined to include a material object in which a work is fixed ‘by any method now known or later developed, and from which the work can be perceived, reproduced, or otherwise communicated, either directly or with the aid of a machine or device.’” (quoting 17 U.S.C. § 117 (2010))).

<sup>144</sup> *Apple Computer, Inc.*, 714 F.2d at 1247–48 (noting that the Copyright Act protects programs used “directly or indirectly” by a computer).

copyright.<sup>145</sup>

These decisions effectively summarize the current state of copyright law as it applies to the copyrightability of video games.<sup>146</sup> Because programs are either application or operating system programs, and they are either written in source or object code, the *Williams* and *Apple* decisions have effectively covered each basis for a challenge to computer programs as copyrightable subject matter, unless the Supreme Court decides to take a case on the issue, which appears unlikely given the general agreement among circuit courts.<sup>147</sup> In light of the broad protection granted to computer programs, the remainder of this section presents a historical account of the video game industry and examines the interactions between the industry and the law.

### B. *The History of Video Games*

The roots of modern-day video games can be traced back well over a century. The oldest ancestor, aside from “games” in a general sense, is the vending machine, which first appeared in the United States in the early nineteenth century.<sup>148</sup> These

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<sup>145</sup> First, Franklin argued that operating system programs could not be protected because they were usually embodied in ROM, which essentially made the programs part of the computer machine. *Id.* at 1251. The Third Circuit rejected this argument. *Id.* at 1251–52 (“Apple does not seek to copyright the method which instructs the computer to perform its operating functions but only the instructions themselves.”). The Third Circuit noted that “protection is given only to the expression of the idea—not the idea itself.” *Id.* at 1252. (quoting *Mazer v. Stein*, 347 U.S. 201, 217 (1954)).

<sup>146</sup> Other cases have tailored copyright law to video games, but they have done little in the way of modifying copyright’s applicability to video games. *See, e.g.*, *Lewis Galoob Toys, Inc. v. Nintendo of Am., Inc.*, 964 F.2d 965, 968 (9th Cir. 1992) (holding that a device which “merely enhances the audiovisual displays” that originate from a protected video game does not infringe); *Sega Enterprises Ltd. v. Accolade, Inc.*, 977 F.2d 1510, 1513–14, 1522–23, 1527–28 (9th Cir. 1992) (finding copying for the purposes of reverse engineering in order to achieve game compatibility likely to be fair use); *Sony Computer Entm’t, Inc. v. Connectix Corp.*, 203 F.3d 596, 598–99, 602–03, 609 (9th Cir. 2000) (reaffirming *Sega* and extending holding to a defendant who reverse engineers games in order to make a competing platform).

<sup>147</sup> *See, e.g.*, *Computer Assoc. Int’l v. Altai Inc.*, 982 F.2d 693, 702 (2d Cir. 1992) (“It is now well settled that the literal elements of computer programs, i.e., their source and object codes, are the subject of copyright protection.”); *M. Kramer Mfg. Co., Inc. v. Andrews*, 783 F.2d 421, 435 (4th Cir. 1986) (noting and agreeing with the ruling in *Apple Computer Inc.*, that held all computer programs, whether source code or object code, were copyrightable).

<sup>148</sup> Rufus King, *The Rise and Decline of Coin-Machine Gambling*, 55 J. CRIM. L., CRIMINOLOGY & POLICE SCI. 199, 199 (1964).

machines were eventually converted into gambling devices that could produce greater profits.<sup>149</sup> The gambling devices eventually evolved into pinball machines, which in turn led to video games. This section traces this evolution. It also provides insight into why the leap from gambling device to video game was a salient step in the evolution.

### 1. Of Vending Machines, Vegas, and Pinball

The first slot machine was developed in 1887.<sup>150</sup> The modified vending machine required a player to insert a nickel and pull a handle, which caused three wheels to spin.<sup>151</sup> Depending on how the wheels stopped, a player could win between ten cents and one dollar.<sup>152</sup> These “one-armed bandits” quickly became very popular.<sup>153</sup> They also clearly displayed all three elements of gambling: consideration (the coin the player inserted), chance (the player had no control over how the wheels stopped), and reward (a winner could receive a reward between five and ninety-five cents plus their original consideration).<sup>154</sup>

As state legislators moved to prohibit gambling, manufacturers changed their gambling devices to skirt the law.<sup>155</sup> The ultimate modified device intended to evade the law was the pinball machine. At one time, these devices were so prominent that they

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<sup>149</sup> Ronald J. Rychlak, *Video Gambling Devices*, 37 UCLA L. REV. 555, 558–59 (1990).

<sup>150</sup> JOHN SCARNE, SCARNE’S NEW COMPLETE GUIDE TO GAMBLING 430 (1974).

<sup>151</sup> *Id.* at 432, 435.

<sup>152</sup> *See id.* at 435 (noting that while the machines listed the payouts for winnings in drinks, ranging from one to ten drinks, the machine paid out in nickels); *See also*, Rychlak, *supra* note 149, at 559 & n.18 (indicating that a gambler could win between ten cents and one dollar). There seems to be a discrepancy as noted in these sources, but it is clear that the payout is between five cents to a dollar.

<sup>153</sup> SCARNE, *supra* note 150 at 430.

<sup>154</sup> Rychlak, *supra* note 149, at 559.

<sup>155</sup> *See City of Moberly v. Deskin*, 155 S.W. 842, 844 (Mo. Ct. App. 1913). (“In no field of reprehensible endeavor has the ingenuity of man been more exerted than in the invention of devices to comply with the letter, but to do violence to the spirit and thwart the beneficent objects and purposes, of the laws designed to suppress the vice of gambling. Be it said to the credit of the expounders of the law that such fruits of inventive genius have been allowed by the courts to accomplish no greater result than that of demonstrating the inaccuracy and insufficiency of some of the old definitions of gambling that were made before the advent of the era of greatly expanded, diversified, and cunning mechanical inventions.”).

provided a large income for organized crime,<sup>156</sup> and some scholars have argued that the slot machine may not have survived World War II if not for the pinball machine.<sup>157</sup>

When pinball machines first appeared in the 1930s, they were designed purely for amusement.<sup>158</sup> They were “flipperless,” glass-covered labyrinths constructed of nails or “pins” into which a player would propel a metal ball.<sup>159</sup> Numbered slots provided a player’s score.<sup>160</sup> In 1935, pinball manufacturers added a new feature – the free replay.<sup>161</sup> Three types of pinball machines emerged with the advent of the free replay feature: novelty machines, payout machines, and free-replay machines.<sup>162</sup> While the free replay feature is still used in modern-day pinball machines,<sup>163</sup> some versions of the feature created reward issues under gambling laws because the free replay feature could be used for gambling purposes.<sup>164</sup> Indeed, the financial incentives for such use were significantly greater than those for legitimate use.<sup>165</sup>

## 2. From Pinball to Playstation

The evolution from pinball to video games is not as well documented as the evolution from vending to pinball machine, but evidence does suggest that such an evolution occurred.

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<sup>156</sup> See King, *supra* note 148, at 205.

<sup>157</sup> *Id.* at 201.

<sup>158</sup> See Rychlak, *supra* note 149, at 563; Brian Lester, *The Free Replay Feature in Pinball Machines: A Fresh look at the Elements of Gambling and a Revised Method of Analysis*, 41 BRANDEIS L.J. 297, 306 (2002).

<sup>159</sup> Lester, *supra* note 158, at 305; see also Rychlak, *supra* note 149, at 563.

<sup>160</sup> Rychlak, *supra* note 149, at 563.

<sup>161</sup> King, *supra* note 148, at 201.

<sup>162</sup> Russ Jensen, *Pingames and Gambling: An Historical Survey*, available at [http://www.pinballcollectorsresource.com/russ\\_files/gambling.html](http://www.pinballcollectorsresource.com/russ_files/gambling.html) (last visited Nov. 8, 2010) (“[B]y the mid to late 1930s there were essentially three types of pingames being produced.”). The payout clearly fell within gambling laws because it provided players a monetary reward, while the novelty version was clearly legal. See Lester, *supra* note 158, at 307.

<sup>163</sup> Lester, *supra* note 158, at 307.

<sup>164</sup> While a free replay is not a monetary reward, machines could track the number of replays a player earned, and these replays could be “cashed in,” whereupon the proprietor would pay the player based on the number of replays earned. See Jensen, *supra* note 162. The proprietor would then reset the machine for the next player. *Id.*

<sup>165</sup> See King, *supra* note 148, at 203 (noting that in the 1940’s and 1950’s the weekly profits of a pinball machine in a good location were \$200-\$300 when used for gambling, but only \$15-\$25 when used for amusement).

Technologically, as electricity became generally accessible, pinball machines were modified to include “illuminated backboard[s], ringing bells, flashing lights, and bright colors.”<sup>166</sup> Further technological advances, such as the dot matrix display, continued to enhance pinball machines,<sup>167</sup> and made them look more like early video arcade games.

Notably, around the time state legislatures targeted pinball machines, manufacturers began producing video gambling devices.<sup>168</sup> These devices were cheap, portable, and low maintenance.<sup>169</sup> Much like pinball machines before them, three types of video gambling device emerged similar to the three kinds of replay pinball machines. Devices designed for gambling accepted multiple coins and included knock-off switches just as their pinball predecessors had.<sup>170</sup> Amusement only devices were sometimes converted into gambling devices,<sup>171</sup> mirroring the earlier pinball trend.

Two of the biggest names from the early video game industry further demonstrate the relationship between pinball and early video games. One major video game firm, SEGA, began as a pinball machine exporter and manufacturer.<sup>172</sup> Atari, the company responsible for PONG, was rooted in the vision of a kid—Nolan Bushnell—working at a pinball arcade who wanted to fill an arcade with computer games instead of pinball machines.<sup>173</sup>

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<sup>166</sup> Rychlak, *supra* note 149, at 563, 566.

<sup>167</sup> Shel Brannan, *How Pinball Machines Work*, HOW STUFF WORKS, <http://electronics.howstuffworks.com/pinball-machine2.htm> (last visited Nov. 8, 2010).

<sup>168</sup> Michael William Eisenrauch, Note, *Video Poker and the Lottery Clause: Where Common Law and Common Sense Collide*, 49 S.C. L. REV. 549, 557–58 (1998).

<sup>169</sup> *Illegal Use of Video Gambling Machs.: Hearing Before the Permanent Subcomm. on Investigations of the S. Comm. on Governmental Affairs*, 98th Cong. 104 (1984) [hereinafter *Gambling Hearing*] (prepared statement of the National Coin Machine Institute).

<sup>170</sup> Rychlak, *supra* note 149, at 566.

<sup>171</sup> *Gambling Hearing*, *supra* note 169, at 104–05 (prepared statement of the National Coin Machine Institute).

<sup>172</sup> Leonard Hermand, Jer Horwitz, Steve Kent & Skyler Miller, *The History of Video Games*, GAMESPOT, [http://www.gamespot.com/gamespot/features/video/hov/p2\\_01.html](http://www.gamespot.com/gamespot/features/video/hov/p2_01.html) (last visited Nov. 8, 2010).

<sup>173</sup> Jeff Dodd, Nolan K. Bushnell, *The Father Of Pong Reflects On His Influence & The Industry's Future*, 8 SMART COMPUTING 133, 133 (2000), available at <http://www.smartcomputing.com/Editorial/article.asp?article=articles/archive/g>

The technological evolution from pinball to video game and the roots of SEGA and Atari suggest that video games were a natural evolution of pinball machines. This suggestion is further supported by the similar legal issues facing video gambling devices.

### 3. Other Legal Concerns of the Time

Though it is now settled law, it was not clear in the late 1970s and early '80s that copyright extended to immoral or obscene subject matter. At one time, courts refused to protect immoral or obscene subject matter with patent rights.<sup>174</sup> Some courts held similar objections to copyrighting immoral or obscene works,<sup>175</sup> but some did not.<sup>176</sup> In 1958, the United States Attorney General noted that such works are not entitled to copyright protection.<sup>177</sup>

The bar to immoral or obscene subject matter, like other areas of copyright law, was not immune to influence from industry. Industries based on “immoral” or “obscene” matter, like

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0810/155g10/155g10.asp&guid=; Hermand, Horwitz, Kent & Miller, *supra* note 172.

<sup>174</sup> See *Reliance Novelty Co. v. Dworzek*, 80 F. 902, 90304 (C.C.N.D. Cal. 1897) (holding patent was not for useful purpose because it was used for frivolous or immoral purposes); *Schultze v. Holtz*, 82 F. 448, 448–49 (C.C.N.D. Cal. 1897) (holding patent invalid because it lacked utility for any other purpose but gambling); *Nat'l Automatic Device Co. v. Lloyd*, 40 F. 89, 89–90 (C.C.N.D. Ill. 1889) (holding denied patent for a gambling device).

<sup>175</sup> See *Simonton v. Gordon*, 12 F.2d 116, 124 (S.D.N.Y. 1925) (stating that public policy requires denial of copyright protection for “blasphemous, seditious, immoral, or libelous” subject matter, but that the work at issue was not immoral); *Hoffman v. Le Traunik*, 209 F. 375, 379 (N.D.N.Y. 1913) (“To be entitled to be copyrighted, the composition must be ‘original, meritorious, and free from illegality or immorality.’”); *Broder v. Zeno Mauvais Music Co.*, 88 F. 74, 77–79 (C.C.N.D. Cal. 1898) (holding that a song was not entitled to copyright protection because lyrics were immoral); *Martinetti v. Maguire*, 16 F. Cas. 920, 922 (C.C. Cal. 1867) (No. 9,173) (holding Congress’ exclusion of immoral subject matter is consistent with the progress limitation of the Progress Clause).

<sup>176</sup> See, e.g., *Bd. of Trade of City of Chi. v. Christie Grain & Stock Co.*, 198 U.S. 236, 250–51 (1905); *Belcher v. Tarbox*, 486 F.2d 1087, 1088 (9th Cir. 1973); *Egbert v. Greenberg*, 100 F. 447, 449–450 (C.C.N.D. Cal. 1900); *Richardson v. Miller*, 20 F. Cas. 722, 723 (C.C.D. Mass. 1877) (No. 11,791).

<sup>177</sup> Opinion of the Attorney General of the United States, 121 U.S.P.Q. 329, 331 (1958) (“It has been generally accepted for years that seditious, libellous, obscene or immoral works are not entitled to copyright.”). See also EATON S. DRONE, *A TREATISE ON THE LAW OF PROPERTY IN INTELLECTUAL PRODUCTIONS* 181–87 (Cambridge: Press of John Wilson & Son 1879); HERBERT A. HOWELL, *THE COPYRIGHT LAW*, 46 (3d ed. 1952).

pornography, were on the rise, and popular acceptance of such industries led the courts to whittle away at the exception.<sup>178</sup> In 1979, the Fifth Circuit eliminated the exclusion completely,<sup>179</sup> and other courts have since followed that example.<sup>180</sup>

It is notable, then, that obscenity and immorality were still viewed as potential bars to copyright at the time that the video game industry was emerging. The implications of this potential bar are discussed below.<sup>181</sup>

### *C. Observations on the Interaction of Copyright Law and Video Games*

Copyright is now broadly applicable to computer programs, and through them, to video games.<sup>182</sup> But what can be discerned from the history of video games as they struggled to acquire the broad protection the industry enjoys today? Five critical observations can be made.

#### 1. Broad Interpretation of the Act's Language

Perhaps most importantly, the expansive language of the Copyright Act was interpreted broadly: for example, it is difficult to characterize a functional series of 0's and 1's as expressive content. This breadth was based in part on the legislative history, which specifically stated that computer programs are a category of literary work.<sup>183</sup> Although the initial language of the

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<sup>178</sup> *Nova Prods., Inc. v. Kisma Video, Inc.*, 2004 U.S. Dis. LEXIS 24171, at \*10–11 (S.D.N.Y. Dec. 1, 2004).

<sup>179</sup> *Mitchell Bros. Film Grp. v. Cinema Adult Theater*, 604 F.2d 852, 858 (5th Cir. 1979) (“We can only conclude that we must read the facially all-inclusive 1909 copyright statute as containing no explicit or implicit bar to the copyrighting of obscene materials, and as therefore providing for the copyright of all creative works, obscene or non-obscene, that otherwise meet the requirements of the Copyright Act.”).

<sup>180</sup> *See, e.g., Jartech, Inc. v. Clancy*, 666 F.2d 403, 406 (9th Cir. 1982); *Schnapper v. Foley*, 667 F.2d 102, 112 (D.C. Cir. 1981).

<sup>181</sup> *See infra* Part III.C.4.

<sup>182</sup> *See, e.g., Apple Computer, Inc. v. Franklin Computer Corp.*, 714 F.2d 1240, 1248–1249 (3d Cir. 1983) (“At issue in *Williams* were not only two audiovisual copyrights to the . . . video game, but also the computer program which was expressed in object code embodied in ROM and which controlled the sights and sounds of the game.”).

<sup>183</sup> H.R. REP. NO. 94-1476 at 52 (1976), *reprinted in* 1976 U.S.C.C.A.N. 5659, 5667.

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Copyright Act was broad enough to encompass computer programs,<sup>184</sup> Congress amended the Act in 1980 to provide for specific limitations upon computer program copyrights.<sup>185</sup>

While the amendment made a clearer statement that computer programs were copyrightable, it did not change the subject matter language which protected computer programs in the first place.<sup>186</sup> Congress's provision of limitations upon computer program copyrights, without changing the scope of copyright subject matter, is evidence that Congress viewed computer programs as copyrightable prior to the 1980 amendment. It simply took courts time to arrive at that conclusion.

## 2. Significant Opposition to Protection

Next, there was significant opposition to the expansion of copyright subject matter to include computer programs. This opposition began before Congress passed the 1976 Act<sup>187</sup> and continued long after the 1980 amendment.<sup>188</sup> Ongoing worries

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<sup>184</sup> See 17 U.S.C. § 101 (2010) (defining “[l]iterary work[ ]’ [as] works, other than audiovisual works, expressed in words, numbers, or other verbal or numerical symbols or indicia, regardless of the nature of the material objects, such as books, periodicals, manuscripts, phonorecords, film, tapes, disks, or cards, in which they are embodied.”).

<sup>185</sup> See 17 U.S.C. § 117 (2010).

<sup>186</sup> The 1980 Amendment did not change the definition of “literary works” within 17 U.S.C. § 101. See Copyright Act of 1980, Pub. L. No. 96-517, § 117, 94 Stat. 3028 (1980).

<sup>187</sup> See Breyer, *supra* note 114, at 340–50.

<sup>188</sup> While opposition to computer program copyrights do not always call for complete refusal of protection to computer programs, they have often called for limited copyright protection, *sui generis* protection, or patent protection, instead of regular copyright. See Donald S. Chisum, *The Patentability of Algorithms*, 47 U. PITT. L. REV. 959, 1013-15 (1986) (advocating for patent protection of algorithms, while acknowledging the heavy opposition to this); John M. Conley & Robert M. Bryan, *A Unifying Theory for the Litigation of Computer Software Cases*, 63 N.C. L. REV. 563, 563–64, 613 (1985) (advocating for modified copyright protection); Dennis S. Karjala, *Copyright, Computer Software, and the New Protectionism*, 28 JURIMETRICS J. 33, 35 (1987) (advocating for specialized form of copyright); Peter S. Menell, *Tailoring Legal Protection for Computer Software*, 39 STAN. L. REV. 1329, 1364–65 (1987) (opposing copyright and advocating a hybrid form of patent protection); Raymond Nimmer & Patricia A. Krauthaus, *Copyright and Software Technology Infringement: Defining Third Party Development Rights*, 62 IND. L. J. 13, 13–14, 16 (1986) (opposing copyright protection for author only and suggesting apportionment of rights between authors and value-added users to encourage dissemination, exchange, and use of ideas); J.H. Reichman, *Computer Programs as Applied Scientific Know-How: Implications of Copyright Protection for Commercialized University Research*, 42

about over-restriction of innovation through the provision of copyright for computer programs<sup>189</sup> have proven unfounded as information technology producers continue to release products at a rapid rate.<sup>190</sup> This opposition to computer program copyright mirrors the much earlier opposition to musical works under the Statute of Anne.<sup>191</sup>

### 3. Video Games: The (Once) Unknown Future of Computer Programs

There appear to be no references to video games in the literature, the legislative history, or case law, prior to the 1976 Act.<sup>192</sup> Video games existed prior to 1976,<sup>193</sup> but those that did exist did not fulfill the copyright requirement of expression as they were purely functional applications of scientific

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VAND. L. REV. 639, 696–98 (1989) (arguing that patent law provides too much protection while copyright provides too little); Pamela Samuelson, *Creating a New Kind of Intellectual Property: Analyzing the Lessons of the Chip Law to Computer Programs*, 70 MINN. L. REV. 471, 476 (1985) (advocating *sui generis* protection); Richard H. Stern, *Tales from the Algorithm War: Benson to Iwahashi, It's Déjà Vu All Over Again*, 18 A.I.P.L.A.Q.J. 371 (1991) (advocating two tiers of protection: patent and *sui generis*). See also Julian Velasco, Comment, *The Copyrightability of Nonliteral Elements of Computer Programs*, 94 COLUM. L. REV. 242, 261 (1994) (noting that copyright law may provide “too much protection” for computer programs).

<sup>189</sup> See, e.g., Matthew Fagin et al., *Beyond Napster: Using Antitrust Law to Advance and Enhance Online Music Distribution*, 8 B.U. J. SCI. & TECH. L. 451, 498–99 (2002) (noting three ways in which copyright protection threatens innovation in new mediums).

<sup>190</sup> See Mark A. Lemley, *Ignoring Patents*, 2008 MICH. ST. L. REV. 19, 19-20 (2008) (noting that information technology industries face an apparent “anticommons” issue if they make products in their industries, “yet make products they do.”). This point is an imperfect fit, as Lemley is examining patents, not copyrights, but that distinction arguably makes the point stronger: with both patent *and* copyright protection restricting use of many innovations in the information technology industries, the anticommons issue should be exacerbated. Yet the IT industry continues to make new and innovative products.

<sup>191</sup> Carroll, *supra* note 42, at 929–30.

<sup>192</sup> See Drobak, *supra* note 113 and accompanying footnote text.

<sup>193</sup> Depending upon the account, something like video games has existed since the 1950s or ‘60s. See David Winter, *PONG-Story*, <http://www.pong-story.com/intro.htm> (last visited Nov. 8, 2010) (citing a 1952 electronic tic-tac-toe game and the game Spacewar, released in 1961, and describing Willy Higginbotham’s modified oscilloscope as a type of tennis video game from 1958). None of these games were “true” video games and were not likely taken too seriously by the law. *Id.*

phenomena.<sup>194</sup> The first video game system to which copyright law could potentially be applied was released after Congress passed the Copyright Act,<sup>195</sup> so it is not surprising that the legislature neglected to address the issue in any discussions.

The essential point is that video games appear to have been a completely unforeseen arena for the application of copyright law. In hindsight, technology was clearly heading in a direction that would lead to protecting video games through copyright as computer programs. And, the passage of the law was in relatively close temporal proximity to the industry shift. Yet, there was striking lack of discussion of video games in discussions of the new Copyright Act. Even with an apparent industrial trend and close temporal relationship to the discussions, the emergence of video games as a viable major industry appears to have been unexpected by Congress.

#### 4. Copyright Signals

Copyright protection for video games may also provide a signal akin to that which Professor Clarisa Long argues is present in patent industries.<sup>196</sup> Her point is essentially that patents can have a “signaling” value to external parties in addition to their potential value based on market exclusion and rents.<sup>197</sup> Professor Long’s theory, while not directly applicable to

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<sup>194</sup> Prior to the release of the Fairchild Channel F in 1976, all video games had dedicated circuits – and thus no code. See *A Brief History of The Home Video Game Console*, THE GAME CONSOLE, <http://thegameconsole.com/> (last visited Nov. 8, 2010) (“The Channel F was the first programmable video game system, having plug-in cartridges containing ROM and microprocessor code rather than dedicated circuits.”).

<sup>195</sup> *Id.*

<sup>196</sup> See Clarisa Long, *Patent Signals*, 69 U. CHI. L. REV. 625, 627-28 (2002).

<sup>197</sup> See *id.* at 626–27 (arguing that patents may have value beyond the standard “rents” view). Professor Long notes that “worthless patents abound,” yet firms continue to patent, even when they are receiving worthless patents. *Id.* at 626 n.2 and accompanying text. See also Mark A. Lemley, *Rational Ignorance at the Patent Office*, 95 NW. U. L. REV. 1495, 1503–04 (2001) (presenting statistics on patent abandonment); Robert P. Merges, *As Many as Six Impossible Patents before Breakfast: Property Rights for Business Concepts and Patent System Reform*, 14 BERKELEY TECH. L.J. 577, 603 (1999) (stating most patented technologies “will not be economically viable or commercially successful”); Edmund W. Kitch, *Property Rights in Inventions, Writings, and Marks*, 13 HARV. J.L. & PUB. POL’Y 119, 122–23 (1990) (describing claims in most patents as “so narrow” as to be “worthless, or very nearly worthless”).

copyrights,<sup>198</sup> does provide a useful insight: under certain circumstances, the presence of copyright can provide some value outside of the potential for exclusion or rent.

Video games arose around the same time as copyright was going through its morality dilemma.<sup>199</sup> Given that video games evolved from immoral gambling devices,<sup>200</sup> they were in a precarious position in terms of protection from the start. For the first several years of its existence, the video game industry proceeded under the risk of having no copyright protection.

As courts began taking video game and computer program cases, these cases were generating an industry-wide “signal.” Unlike patent signals, which are emitted by specific patents or patent portfolios,<sup>201</sup> this signal applied to all video games. Not only were video games copyrightable, but copyrightability indicated that these video games are legitimate, non-gambling devices. Thus, copyright could potentially act as a “legitimizing” signal,<sup>202</sup> informing potential purchasers or licensees that a given video game avoids gambling laws.

## 5. The Law and Industry Interaction

Lastly, it should be noted that there is a constant interplay between law and the precursors to the video game industry. Before video games, courts noted that gambling devices were regularly modified in reaction to legal change.<sup>203</sup> Meanwhile, law makers responded to these changes.<sup>204</sup> As video game

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<sup>198</sup> See Long, *supra* note 196, at 657 (“In order to make credible claims, innovative firms must engage in behaviors that impose substantial monetary or reputational costs if the signal is inaccurate.”). Acquiring patents incurs such costs, while copyright acquisition does not.

<sup>199</sup> See *supra* Part III.B.3.

<sup>200</sup> Gambling devices were considered immoral. See *Reliance Novelty Co. v. Dworzek*, 80 F. 902, 903 (C.C.N.D. Cal. 1897); *Schultze v. Holtz*, 82 F. 448, 449 (C.C.N.D. Cal. 1897); *Nat’l Automatic Device Co. v. Lloyd*, 40 F. 89, 90 (C.C.N.D. Ill. 1889).

<sup>201</sup> See Long, *supra* note 196, at 643.

<sup>202</sup> The term “legitimizing,” as used here, only means that a copyright could be used as evidence against illegal activity.

<sup>203</sup> *City of Moberly v. Deskin*, 155 S.W. 842, 844 (Mo. Ct. App. 1913) (noting that ingenuity is readily applied to design gambling devices that “comply with the letter, but . . . do violence to the spirit . . . of the law[ ] . . .”).

<sup>204</sup> Rychlak, *supra* note 149, at 560 (characterizing the interaction between manufacturers and lawmakers as a game of “leap frog,” with lawmakers criminalizing one device, only to have manufacturers design a new machine that did not fall within the prohibition).

manufacturers expanded into the gambling field,<sup>205</sup> states once again responded to the new technology.<sup>206</sup>

Furthermore, computers and video games interacted directly with intellectual property laws. As computer programming became a viable technological field,<sup>207</sup> the Copyright Office began accepting computer program registrations under a “rule of doubt.”<sup>208</sup> Congress established CONTU with this issue in mind.<sup>209</sup> With CONTU’s findings in mind, the *Apple* court unequivocally extended copyright protection to all forms of computer program.<sup>210</sup>

*Apple* provided exactly the protection necessary for the video game market to recover from the crash of the video game industry in the early 1980s.<sup>211</sup> While cartridge-based games existed prior to *Apple*, their programming was not clearly

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<sup>205</sup> See Eisenrauch, *supra* note 168, at 558.

<sup>206</sup> For example, South Carolina, which historically adhered to an anti-gambling policy. See *State v. Blackmon*, 304 S.C. 270, 273–74 (S.C. 1991) (finding that the state’s antigambling statute, 7 S.C. Jurisprudence Gaming § 2 (1991), created an exception to its gambling prohibition for video poker machines in S.C. Code Ann. § 16-19-60).

<sup>207</sup> Konrad Zuse first used binary mathematics and Boolean logic in 1941 to create the world’s first programmable calculator. See *Triumph of the Nerds: A History of the Computer*, PBS, <http://www.pbs.org/nerds/timeline/elec.html> (last visited Nov. 8, 2010). In 1964, researchers at Dartmouth introduced the first programming language, BASIC. See James Durham, *History-making Components: Tracing the Roots of Components From OOP through WS*, IBM (Apr. 1, 2001), <http://www.ibm.com/developerworks/webservices/library/ctmline/>; *Timeline of Computing History*, IEEE COMPUTER SOCIETY, <http://www.computer.org/cms/Computer.org/Publications/timeline.pdf> (last visited Nov. 8, 2010). The creation of a programming language that people could easily understand was a key component in the computer revolution.

<sup>208</sup> See U.S. CONGRESS, OFF. TECH. ASSESSMENT, OTA-TCT-527, FINDING A BALANCE: COMPUTER SOFTWARE, INTELLECTUAL PROPERTY, AND THE CHALLENGE OF TECHNOLOGICAL CHANGE, THE LAW (1992). Essentially, the Copyright Office was unsure whether copyright extended to computer programs.

<sup>209</sup> See Act of Dec. 31, 1974, Pub. L. No. 93-573, 88 Stat. 1873 (amending Title 17 of the U.S.C. and establishing CONTU); see also COHEN, ET AL., *supra* note 124, at 236.

<sup>210</sup> See *Apple Computer Inc. v. Franklin Computer Corp.*, 714 F.2d at 1240, 1249 (3d Cir. 1983).

<sup>211</sup> The video game market crashed in the early 1980s due in large part to missteps by the two major developers at the time. Atari, for its part, produced more copies of one game than it had produced consoles, and it proceeded to release a new, incompatible console shortly after the release. This led to Atari’s parent company, Warner Communications, posting a stock drop of 32% in a single day. See Hermand, Horwitz, Kent & Miller, *supra* note 172. Coleco, for its part, decided not to continue investing in its wildly successful Colecovision, but instead attempted to develop and market a computer that eventually led to Coleco’s demise in 1988. *Id.*

protected, so they could be freely ported from one competitor's system to another. The resulting overproduction of similar games contributed to the crash.<sup>212</sup> After the *Apple* decision, Nintendo was able to manufacture and protect the source and object code in cartridge games. Porting could, at worst, be considered a derivative work that Nintendo had rights over.<sup>213</sup>

The interaction between law and video games continued long after it was established that video games fell under copyright's protection. As video game manufacturers attempted to use their copyrights in ways not envisioned by the Act, fair use was used to further incentivize innovation by allowing new market entrants in both the cartridge<sup>214</sup> and platform<sup>215</sup> markets. It appears unlikely that the co-evolution of video games and copyright law will end any time soon.

## 6. Conclusion

The video game industry is a valuable example of how liberal interpretation and flexible application of an intellectual property law can help foster innovation, particularly in unforeseen fields. Video game programs, as functional subject matter, were arguably not copyrightable, despite clearly falling within the statutory language. As is common when intellectual property rights are applied to new subject matter,<sup>216</sup> the application of

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<sup>212</sup> *Id.*

<sup>213</sup> *Atari Games Corp. v. Nintendo*, 975 F.2d 832, 845, 847 (1992).

<sup>214</sup> *See Sega Enter. Ltd. v. Accolade, Inc.*, 977 F.2d 1510 (9th Cir. 1992) (finding defendant's reverse engineering for the purpose of creating compatible games to be fair use).

<sup>215</sup> *See Sony v. Connectix*, 203 F.3d 596, 607–08 (9th Cir. Cal. 2000) (extending *Sega* to defendant's reverse engineering for the purpose of creating a competitive platform).

<sup>216</sup> *See eBay Inc. v. MercExchange, L.L.C.*, 547 U.S. 388, 396–97 (2006) (Kennedy, J., concurring) (noting in a business method patent decision the "suspect validity of some of these patents," possibly implying that business methods are of suspect validity); *Excel Comm'n v. AT&T Corp.*, 528 U.S. 946, 946-47 (1999) (statement of Stevens, J., respecting denial of certiorari) (explaining that "it [is] appropriate to reiterate the fact that the denial of the petition does not constitute a ruling on the merits," to express doubt over the constitutionality of business method patents). *See also* Carroll, *supra* note 42, at 930, 942, 952 (noting that copyright printed music received significant opposition from publishers); Leo Raskind, *The State Street Bank Decision: The Bad Business of Unlimited Patent Protection for Methods of Doing Business*, 10 *FORDHAM INTELL. PROP. MEDIA. & ENT. L.J.* 61, 61 (1999) (describing *State Street* as "so sweeping a departure from precedent as to invite a search for its justification").

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copyright to computer programs received significant opposition. Yet, as is also common, fears over stifling innovation have proven unfounded. Additionally, the broad provision of federal intellectual property protection to the industry has resulted in a legitimizing signal that has allowed the video game industry to escape its roots in illicit gambling.

**IV. PATENT LAW AND THE BUSINESS METHOD “INDUSTRY”**

Unlike the video game industry, which is a clearly definable market, several fields fit within the indefinable business method “industry.” The PTO has established a classification for “modern business data processing,” Class 705, directed to “diverse business functions.”<sup>217</sup> Class 705 includes “Insurance, Stock [and] Bond Trading, Health Care Management,” tax processing, and other financial services.<sup>218</sup> As used herein, the term “business method industry” refers generally, but not solely, to these fields.

There are many parallels between the fields of the business method industry and the video game industry. They both stand on the edge of their respective intellectual property regimes: video game programs are highly functional, a traditional bar to copyrightability,<sup>219</sup> while business methods are not viewed as technological, the traditional hurdle for patent eligibility.<sup>220</sup> They have also both been subject to significant opposition. Other observations on the parallels between business methods and video games are made at the end of this part.<sup>221</sup>

This section discusses the application of patent law to business methods. This discussion demonstrates patent law’s relative inflexibility toward non-paradigmatic technological innovations. Section A discusses the law, both as it stands post-Federal Circuit *Bilski* and as it stood before *Bilski*. Section B provides a historical background of the business methods as an industry. Section C provides observations.

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<sup>217</sup> See U.S. PAT. TRADEMARK OFF., USPTO WHITE PAPER – AUTOMATED BUSINESS METHODS – SECTION III CLASS 705, U.S. Pat. & Trademark Off. (Mar. 4, 2010), <http://www.uspto.gov/patents/resources/methods/afmdpm/class705.jsp> [hereinafter AUTOMATED BUSINESS METHODS – WHITE PAPER].

<sup>218</sup> *Id.*

<sup>219</sup> See 17 U.S.C. § 102(b) (2010); CONTU REPORT, *supra* note 10, at 20.

<sup>220</sup> See *infra* notes 300, 315–17 and accompanying text.

<sup>221</sup> See *infra* Part IV.C.

### A. Patent Law as it Applies to Business Methods

There are, at present, three general periods of disparate treatment of business methods in patent law. The first is the period prior to the *State Street Bank* decision in 1998. During this period, courts treated business methods as an exception to patentable subject matter, although the United States Patent and Trademark Office (“USPTO”) occasionally allowed business methods to be patented. The *State Street* decision is the beginning of the second period, where both courts and the USPTO accepted business methods as patentable subject matter. The third period began with *Bilski*. The actual outcome of this period is irrelevant for the purposes of this article, but a general discussion is provided.

#### 1. Business Methods, Pre-*State Street*

The existence of an actual exception to patent eligibility for business methods is debatable. Prior to 1998, patent lawyers operated under an assumption that business method patents were not patentable.<sup>222</sup> The “rule” is essentially just a specific application of the rule that ideas are not patentable.<sup>223</sup> But the business method rule itself has never been applied by an appellate patent court to invalidate a patent.<sup>224</sup>

While most lawyers were under the impression that business methods were not patentable, some were willing to file patent applications for business methods. As far back as 1777, patents were granted for business methods.<sup>225</sup> Such patents have been granted consistently, albeit infrequently, since then.<sup>226</sup> Indeed,

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<sup>222</sup> See Del Gallo, *supra* note 29, at 403.

<sup>223</sup> *Id.* at 404.

<sup>224</sup> *State St. Bank & Trust Co. v. Signature Fin. Grp., Inc.*, 149 F.3d 1368, 1375 (1998), *abrogated by In re Bilski*, 545 F.3d 943, (Fed. Cir. 2008) (“The business method exception has never been invoked by this court, or the CCPA, to deem an invention unpatentable.”). See also Del Gallo, *supra* note 29, at 403, 413.

<sup>225</sup> See *In re Bilski*, 545 F.3d 943, 989 (Fed. Cir. 2008) (Newman, J., dissenting) (noting that the concurring opinion by Dyk, J., which cites only one business method patent granted between 1612 and 1973, omits several patents which involve financial subject matter).

<sup>226</sup> See, e.g., U.S. Patent No. 395,781 (filed June 8, 1889) (issued Jan. 8, 1889) (“Art of Compiling Statistics”); U.S. Patent No. 2,594,865 (filed Jan. 20, 1947)

even the patent at issue in *State Street* issued prior to litigation.<sup>227</sup> Thus, the state of the law prior to *State Street* was that lawyers, and presumably district courts, operated under a presumption that business methods are not patentable, while appellate courts and the USPTO operated under the presumption that they are.

## 2. The State Street Period

This duality continued until 1998, when the Federal Circuit clearly laid the business method exception to rest.<sup>228</sup> The patent at issue in *State Street* was a data processing system for implementing an investment structure.<sup>229</sup> Although it originally contained method claims,<sup>230</sup> the issued patent only contained machine claims.<sup>231</sup> Notably, the Federal Circuit hinted that the outcome of its analysis would be the same if the method claims were part of the issued patent.<sup>232</sup>

The Federal Circuit noted that “[s]ince the 1952 Patent Act, business methods have been, and should have been, subject to the same legal requirements for patentability as applied to any other process or method.”<sup>233</sup> Following this reasoning, the Circuit applied a “useful, concrete and tangible result” test.<sup>234</sup> As *State*

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(issued Apr. 29, 1952) (“System for Making Reservations”); U.S. Patent No. 6,070,147 (filed Jul. 2, 1996) (issued May 30, 2000) (“Customer Identification and Marketing Analysis Systems”). See generally, U.S. PATENT & TRADEMARK OFFICE, A WHITE PAPER, AUTOMATED FINANCIAL OR MANAGEMENT DATA PROCESSING METHODS (BUSINESS METHODS) 3-4, app. A (2000), available at <http://www.uspto.gov/web/menu/busmethp/whitepaper.pdf> [hereinafter USPTO WHITE PAPER].

<sup>227</sup> See U.S. Patent No. 5,193,056 (filed Mar. 11, 1991) (issued Mar. 9, 1993).

<sup>228</sup> *State St. Bank & Trust Co.*, 149 F.3d at 1375 (“We take this opportunity to lay this ill-conceived [business method] exception to rest.”).

<sup>229</sup> *Id.* at 1370.

<sup>230</sup> *Id.* at 1371.

<sup>231</sup> *Id.* at 1372 (“[C]laim 1, properly construed, claims a machine . . .”).

<sup>232</sup> *Id.* at 1372 (“[F]or the purposes of a § 101 analysis, it is of little relevance whether claim 1 is directed to a ‘machine’ or a ‘process,’ as long as it falls within at least one of the four enumerated categories of patentable subject matter, ‘machine’ and ‘process’ being such categories.”).

<sup>233</sup> *Id.* at 1375.

<sup>234</sup> *State St. Bank & Trust Co. v. Signature Fin. Grp., Inc.*, 149 F.3d 1368, 1373 (1998) (holding that “a practical application of a mathematical algorithm, formula, or calculation, [is patentable] because it produces ‘a useful, concrete and tangible result’ . . .”). The useful result was “a final share price . . . [used by] regulatory authorities and [ ] subsequent trades.” *Id.* In other words, the “useful result” was entirely business-oriented.

*Street* “triggered an awareness of the ‘business method claim’ as a viable form of patent protection”<sup>235</sup> business method patent filing skyrocketed from the occasional application before to several thousand each year a short time after *State Street*.<sup>236</sup>

### 3. The *Bilski* Period

This period is not well-established enough to make any qualitative observations on *Bilski*’s effect on business method innovation. Nor is it certain that *Bilski* will stand, as the Supreme Court has granted certiorari.<sup>237</sup> It suffices to say that the Federal Circuit held that a process is patentable if: “(1) it is tied to a particular machine or apparatus, or (2) it transforms a particular article into a different state or thing.”<sup>238</sup> The decision abrogated *State Street*’s useful, concrete and tangible result test,<sup>239</sup> although the new machine-or-transformation test is perhaps less clear than the useful, concrete and tangible test.<sup>240</sup> Regardless of the Supreme Court’s decision, the *Bilski* decision is illustrative of the unnecessarily conservative interpretation of patentable subject matter.

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<sup>235</sup> USPTO WHITE PAPER, *supra* note 226, at IV.B.

<sup>236</sup> See *Hearing on Issues Relating to the Patenting of Tax Advice Before the Subcomm. on Select Revenue Measures of the H. Comm. on Ways & Means*, 109th Cong. 8 (2006), available at <http://waysandmeans.house.gov/Hearings/transcript.aspx?NewsID=10219> [hereinafter *Patent Hearings*].

<sup>237</sup> *Bilski v. Doll*, 545 F.3d 943 (Fed. Cir. 2008), *cert. granted*, 129 S.Ct. 2735 (U.S. June 1, 2009).

<sup>238</sup> *In re Bilski*, 545 F.3d 943, 954 (Fed. Cir. 2008).

<sup>239</sup> See *id.* at 959-60 (concluding that the “‘useful, concrete and tangible result’” test is inadequate).

<sup>240</sup> *Id.* at 995 (Newman, J., dissenting) (“From either the machine or the transformation viewpoint, the processing of data representing ‘price, profit, percentage, cost, or loss’ in *State Street Bank* is not materially different from the processing of the *Bilski* data representing commodity purchase and sale prices, market transactions, and risk positions; yet *Bilski* is held to fail our new test, while *State Street* is left hanging.”); *id.* at 996 (Newman, J., dissenting) (noting that “any practical embodiment would be conducted with the aid of a machine – a programmed computer – but the court holds that since computer-implementation is not recited in claim 1, for that reason alone the process fails the ‘machine’ part of the court’s machine-or-transformation test . . . [and] the process fails the ‘transformation’ test because no ‘physical objects or substances’ are transformed”).

*B. The History of Business Methods*

There are two distinct tracks in the history of business methods. The first, the historical patenting of business-related inventions in the United States, is referenced above and is not substantive enough to discuss in further detail.<sup>241</sup> Suffice to say that business patents have existed in the United States at least since 1777, and several of these patents were granted for methods of doing business.<sup>242</sup>

Industrial issues external to patent law may also have induced firms to file more patent applications. The latter half of the twentieth century saw economics evolve into a more technology-oriented field. Just as video games evolved from the gambling industry, business methods may have been influenced by the financial scandals around the turn of the century.

## 1. Becoming Technology

From an industrial perspective, the critical trend is the changing view of economics and business as a science. The relative dearth of business-oriented patent applications throughout the nineteenth and early twentieth centuries evidences a majority view that business did not directly overlap with technology.<sup>243</sup> The latter half of the twentieth century has seen a trend towards merging economics and technology. This trend is perhaps more important than any business patent filing statistics.<sup>244</sup> While the internet has almost certainly played a part in the increase in business method innovation,<sup>245</sup> the

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<sup>241</sup> See *supra* notes 222–23.

<sup>242</sup> See *Bilski*, 545 U.S. at 989 (Newman, J., dissenting) (citing English patents from 1777 and 1778 that were recognized in the United States and qualify as either business methods or financial subject matter that require significant human activity to perform); see also USPTO WHITE PAPER, *supra* note 226, at 23–29 (citing business-related patents, including several methods, as far back as 1815).

<sup>243</sup> USPTO WHITE PAPER, *supra* note 226, at 23–29.

<sup>244</sup> See John F. Duffy, *Why Business Method Patents?* 5 (unpublished research paper, last revised Nov. 9, 2009), available at <http://ssrn.com/abstract=1501317> (“More importantly, however, any attempt to explain the rise in business method patents must take into account the enormously important developments that were occurring *outside the legal system*.”).

<sup>245</sup> See Linda M. Beale, *Is Bilski Likely the Final Word on Tax Strategy Patents? Coherence Matters*, 9 J. MARSHALL REV. INTELL. PROP. L. 110, 115 (2009) (noting that “[b]usinesses-- especially those that have global connections

industrial shift began long before the internet became a viable technology.

The increasing convergence of economics and technology is rooted in the 1950s. An article from the *Journal of the Operations Research Society of America* surveyed the field of “operations research,” concluding that the field “has origins in common with modern science” and that the evolution of operations research was “a logical evolution, rather than a radical innovation.”<sup>246</sup> By 1959, fields such as “management science,” “engineering economics” and “operations research [were] flourishing” fields in which significant “work [was] being done by mathematicians, statisticians, engineers, and physical scientists.”<sup>247</sup>

The last two decades of the twentieth century saw the acceleration of the convergence between economics and technology.<sup>248</sup> The early 1980’s saw American Express name an “Ex-Physicist” to head a newly-created consumer financial services group.<sup>249</sup> By the middle of that decade, “[Wall] Street’s newest professionals are the ‘rocket scientists’ and ‘quants’ - oftentimes [sic] former academics in the pure sciences of mathematics and physics—who search for new ways to apply the computer to all sorts of [business] problems.”<sup>250</sup> This hiring trend has continued since the 1980s. According to Professor Andrew Lo, Director of MIT’s Laboratory for Financial Engineering, the market crash of the 2000s, for example, has not deterred Wall Street from bringing in more scientists and engineers.<sup>251</sup>

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or use the internet and other electronic commerce” have developed proprietary models, and that “[c]ompetitive pressures have led many of these businesses to seek protection for these proprietary models at the Patent Office”). See also Kevin M. Baird, Comment, *Business Method Patents: Chaos at the USPTO or Business as Usual?*, 2001 U. ILL. J.L. TECH. & POL’Y 347, 347 (2001).

<sup>246</sup> M. L. Hurni, *Observations on Operations Research*, VOL. 2, J. OPERATIONS RES. SOC. AM. 234, 235, 244 (1954).

<sup>247</sup> Herbert A. Simon, *Theories of Decision-Making in Economics and Behavioral Science*, 49 AM. ECON. REV. 253, 254 (1959).

<sup>248</sup> Duffy, *supra* note 244, at 17 (“Economics, business, finance and similar fields began to develop into much more technological disciplines during the last quarter of the twentieth century.”).

<sup>249</sup> *Business People; Ex-Physicist to Head American Express Unit*, N.Y. TIMES, Aug. 27, 1981, at D2.

<sup>250</sup> David E. Sanger, *Wall Street’s Tomorrow Machine*, N.Y. TIMES, Oct. 19, 1986, at 3.

<sup>251</sup> Dennis Overbye, *They Tried to Outsmart Wall Street*, N.Y. TIMES, Mar. 10, 2009, at D1, available at <http://www.nytimes.com/2009/03/10/science/10quant.html> (“The recent debacle

Business methods have become viewed as more “scientific” in the academic world, as well. Since the late 1980s, for example, academic literature has increasingly discussed “financial engineering” as a heavily mathematical area of finance.<sup>252</sup> This field has been recognized as “the *innovative* component of financial applications.”<sup>253</sup> Innovation has become a major aim of the field.<sup>254</sup>

Just as innovation drives university research in the traditional technology regimes, the innovative purpose of financial engineering has led many leading research institutions to create departments directed at researching financial engineering and related topics.<sup>255</sup> Such departments have become commonplace in top-tier engineering institutions throughout the country.<sup>256</sup>

## 2. Financial Scandal

One last note on the history of business methods is called for in light of events from around the turn of the century. Areas of law aside from intellectual property may have played a part in encouraging increased filing in business methods. Specifically, the financial scandals around the turn of the century may have had an impact on the business method industry.

Perhaps the best-known examples of these financial scandals are Enron and WorldCom. Without getting into detail, the Enron scandal involved manipulation of the company’s financial results through the use of special purpose entities.<sup>257</sup> WorldCom involved accounting fraud centered on presenting significant liabilities as capital assets.<sup>258</sup> Even Freddie Mac, a quasi-private entity, provided misleading financial results.<sup>259</sup> The exact details

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has only increased the hunger for scientists on Wall Street.”).

<sup>252</sup> Duffy, *supra* note 244, at 23.

<sup>253</sup> *Id.* at 23 (emphasis added).

<sup>254</sup> John D. Finnerty, *Financial Engineering in Corporate Finance: An Overview*, 17 FIN. MGMT. 14, 14 (1988) (“Financial engineering involves . . . the implementation of *innovative* financial instruments and *processes*”) (emphasis added).

<sup>255</sup> Duffy, *supra* note 244, at 24.

<sup>256</sup> *See id.* at app. 1, 27–32 (presenting information on top-20 engineering schools with financial engineering or related curricula).

<sup>257</sup> *See* James A. Fanto, *Subtle Hazards Revisited: The Corruption of a Financial Holding Company by a Corporate Client’s Inner Circle*, 70 BROOK. L. REV. 7, 18–19, 20 n.29 (2004).

<sup>258</sup> *Id.* at 25.

<sup>259</sup> *See* Off. Fed. Hous. Enter. Oversight, Report of the Special Examination of

are not important here. The timing is: signs of Enron's deteriorating financial position were observed in May of 2001, although the knowledge did not become widespread until later.<sup>260</sup> WorldCom admitted to improper accounting in June of 2002.<sup>261</sup> Even more recently, issues involving tax shelters have created a stir among the legal community,<sup>262</sup> a topic which Congress has also recently addressed.<sup>263</sup>

How does the timing of these scandals demonstrate an influence on the filing of business method patents? First, there was a notable increase in business method patent filing in 2001<sup>264</sup> – the year that news of Enron broke. In 1998, there were approximately 1,500 business method patents filed.<sup>265</sup> There were approximately 9,000 applications filed in 2001, with a current filing rate of 8,200 applications per year.<sup>266</sup>

While this does not necessarily establish a link between business method patents and financial scandal, the scandals are closer, temporally, to the largest jump in business method filings than are the internet or *State Street*. Further, the business method field includes areas like tax processing, accounting and financial management.<sup>267</sup> These business areas are those most closely linked with the financial scandals. Accounting practices and financial management were directly at issue in the Enron

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Freddie Mac, available at <http://www.fhfa.gov/Preview-FHFAWWW/webfiles/749/specialreport122003.pdf>, 74-82 (Dec. 2003). See also Fanto, *supra* note 257, at 27.

<sup>260</sup> Edward Wyatt, *Enron's Many Strands: Warning Signs; Credit Agencies Waited Months to Voice Doubt About Enron*, N.Y. TIMES, Feb. 8, 2002, available at <http://www.nytimes.com/2002/02/08/business/enron-s-many-strands-warning-signs-credit-agencies-waited-months-voice-doubt.html> (reporting that S&P, Moody's, and Fitch each delayed downgrading Enron's credit ratings until just before Enron filed bankruptcy).

<sup>261</sup> Marilyn Geewax, *WorldCom Debacle: Scandals Energizing Financial Reform*, ATLANTA J. CONST., June 30, 2002, at Q1 ("The firestorm of June headlines included . . . [WorldCom's admission that] it had improperly accounted for more than \$3.8 billion of expenses.").

<sup>262</sup> See, e.g., Mark Hamblett, *Role of Opinion Letters Takes Stage in KPMG Trial*, 240 N.Y.L.J 1 (2008), available at <http://www.law.com/jsp/article.jsp?id=1202425335336>.

<sup>263</sup> See *Patent Hearings*, *supra* note 236.

<sup>264</sup> See *id.* (statement by James Toupin, General Counsel, U.S. Patent and Trademark Office addressing that there were approximately 1,500 business method patents filed in 1998, but approximately 9,000 in 2001).

<sup>265</sup> *Id.*

<sup>266</sup> *Id.*

<sup>267</sup> *Id.*

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and WorldCom scandals,<sup>268</sup> while the tax shelter cases are clearly related to tax processing.

*C. Observations on the Interaction of Patent Law and  
Business Methods*

The business method industry has developed and evolved consistently since the 1950s. Over the course of its evolution, it has also faced many issues similar to those that the computer program industry faced while that industry was fighting for intellectual property protection. Each of the observations made in the computer program discussion<sup>269</sup> is mirrored here.

1. Broad Interpretation of the Act's Language

While the law is still in a state of flux with respect to business methods, the *State Street* decision provides a roadmap for broad interpretation of the Patent Act. That decision acknowledged that at least as far back as the 1952 Act, business methods were statutory subject matter.<sup>270</sup> The Act defines patentable method subject matter as “*any new and useful process . . .*”<sup>271</sup> It further defines a process as “*process, art or method . . .*”<sup>272</sup>

The Supreme Court has cautioned against reading limitations into the statutory subject matter which Congress did not intend.<sup>273</sup> Section 101 is written in broad language, and judicially-created exceptions like the business method exception serve only to narrow Congress's intended scope. Because courts and legislatures cannot anticipate new technologies, such unnecessary exceptions serve only to impede innovation. Thus, when a subject matter issue arises over a new technology, broad interpretation serves better the purposes of patent law than does the application of judicial exceptions created without grounding in statutory language. Thus, *any method* is statutory subject

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<sup>268</sup> See *Fanto*, *supra* note 257, at 18–19, 25.

<sup>269</sup> See *supra* Part III. C.

<sup>270</sup> *State St. Bank & Trust Co. v. Signature Fin. Grp., Inc.*, 149 F.3d 1368, 1375 (1998).

<sup>271</sup> 35 U.S.C. § 101 (2010) (emphasis added).

<sup>272</sup> 35 U.S.C. § 100(b).

<sup>273</sup> See *Diamond v. Chakrabarty*, 447 U.S. 303, 308 (1980) (“We have also cautioned that courts ‘should not read into the patent laws limitations and conditions which the legislature has not expressed.’”) (citation omitted).

matter, so any rejection of a business method application should be based on the other requirements for patent eligibility, not on § 101.<sup>274</sup>

## 2. Significant Opposition to Protection

Business method patents have faced significant opposition. In cases not addressing subject matter, the Supreme Court has questioned the validity of business method patents.<sup>275</sup> *Bilski* has essentially eliminated the viability of business methods as patents by requiring that a method be tied to a machine or transform matter.<sup>276</sup>

Commentators have also opposed the protection of business methods. Some only oppose business methods as applied to certain industries.<sup>277</sup> Others viewed the *State Street* decision as too sweeping a departure from previous law.<sup>278</sup> Some have even accused the Federal Circuit of attempting to expand the patent domain through “judicial fiat.”<sup>279</sup>

## 3. The Unknown Future of Business Methods

While concerns over business method patents are not unfounded, the predicted risks are just that: predictions. It is just as plausible that business methods will prove beneficial to innovation. As with computer programs and video games,

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<sup>274</sup> See *State St. Bank & Trust Co.*, 149 F.3d at 1372 (“The plain and unambiguous meaning of § 101 is that any invention falling within one of the four state categories of statutory subject matter may be patented, provided it meets the other requirements for patentability set forth in Title 35, i.e., those found in §§ 102, 103, and 112, [¶]2.”) (citation omitted); *In re Bergy*, 596 F.2d 952, 960–61 (C.C.P.A 1979).

<sup>275</sup> See *Ebay Inc., v. Mercexchange, L.L.C.*, 547 U.S. 388, 396–97 (2006) (Kennedy, J., concurring).

<sup>276</sup> *In re Bilski*, 545 F.3d 943, 959–60, (Fed. Cir. 2008), *Cert. Granted*, *Bilski v. Doll*, 129 S.Ct. 3218 (2009), *aff’g* *Bilski v. Kappos*, 130 S.Ct. 3218 (2010).

<sup>277</sup> See generally, Jared Earl Grusd, *Internet Business Methods: What Role Does and Should Patent Law Play?*, 4 VA. J.L. & TECH. 9 (1999) (arguing that business method patents should not be granted for internet business methods).

<sup>278</sup> Raskind, *supra* note 216, at 61 (describing the *State Street* decision as “so sweeping a departure from precedent as to invite a search for its justification.”).

<sup>279</sup> BRIAN KAHIN, PATENT REFORM FOR A DIGITAL ECONOMY, COMPUTER & COMMUNICATIONS INDUSTRY ASSOCIATION 21–22 (2006), available at [http://www.ccianet.org/CCIA/files/ccLibraryFiles/Filename/000000000081/CCIA\\_WP\\_PatReformDigEcon.pdf](http://www.ccianet.org/CCIA/files/ccLibraryFiles/Filename/000000000081/CCIA_WP_PatReformDigEcon.pdf).

nobody can predict exactly what effect intellectual property protection for new subject matter may have.

Even the Federal Circuit has acknowledged that it is impossible to predict how technology will develop, admitting that some developments “may present difficult[ies] [for the] . . . machine or transformation test.”<sup>280</sup> Judge Newman further stressed the point in her dissent, stating that the decision’s “impact on the future, as well as on the thousands of patents already granted, is unknown.”<sup>281</sup> Because of the uncertainty in predicting where and how technology will develop, the Patent Act was drafted to provide broad protection, “lest advance restraints inhibit the unknown future.”<sup>282</sup>

Nowhere is this inability to foresee technological change more evident than in the business method arena. The current Patent Act was drafted around the same time that economics began evolving into a technological field.<sup>283</sup> Even given this temporal proximity, it is unlikely that the drafters anticipated how quickly and closely economics and technology would converge. Critically, even without such foresight, the Patent Act was drafted in a manner capable of encompassing what came of that convergence; indeed, for a short time it did, by way of *State Street*.<sup>284</sup>

Judge Newman’s point on the unknown future also bears upon the opposition to business method patents. Opponents tend to concentrate on *potential* negatives. As Judge Newman aptly observes, there are also potential benefits in providing protection for business methods.<sup>285</sup> It thus seems wiser to make business methods patentable, thereby ensuring that a court’s decision does not bar a future useful art from patent eligibility.

#### 4. Patent Signals

Professor Long’s patent signals theory is directly applicable in

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<sup>280</sup> *Bilski*, 545 F.3d at 956. Beyond admitting that “difficulties” might arise, the Federal Circuit further acknowledged the limitations in their new test, stating that “we certainly do not rule out the possibility that this court may in the future refine or augment the test or how it is applied.” *Id.*

<sup>281</sup> *Id.* at 976 (Newman, J., dissenting).

<sup>282</sup> *Id.* at 977 (Newman, J., dissenting).

<sup>283</sup> The Patent Act was enacted in 1952. Act of July 19, 1952, ch. 950, 66 Stat. 792, (codified at 35 U.S.C. § 101). The intellectual precursors to the economic evolution are also rooted in the 1950s. See Duffy, *supra* note 244, at 5.

<sup>284</sup> AUTOMATED BUSINESS METHODS - WHITE PAPER, *supra* note 217, at IV(B).

<sup>285</sup> *Bilski*, 545 F.3d at 992–93.

the area of business methods.<sup>286</sup> Patents are expensive to obtain<sup>287</sup> – unlike copyrights<sup>288</sup> – and therefore, a firm’s willingness to invest in patents enforces any signal a patent may send.<sup>289</sup> After all, firms are unlikely to invest \$20,000 in a patent without the intent to use the patent in some way – either as a signal generator, a means for obtaining rent, or any other use.<sup>290</sup> Large patent portfolios may emit even stronger signals<sup>291</sup> due to the increased costs of acquisition and maintenance.

While such signals may be important between patent-holding entities and investors,<sup>292</sup> they may send even more critical signals

to consumers. One particular signal that business method patents may send is not addressed by Professor Long: legitimization. Just as a copyright may act as a “legitimizing” signal for video games,<sup>293</sup> a patent may emit an even stronger legitimizing signal based on the necessary expenditures and risks inherent in obtaining it.

Business method patents can send signals that mitigate the worries over the financial scandals that were uncovered around the time the Federal Circuit eliminated the business method

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<sup>286</sup> See Long, *supra* note 193 (explaining the theory that patents serve an informative function).

<sup>287</sup> See Erwin F. Berrier, Jr., *Global Patent Costs Must Be Reduced*, 36 IDEA 473, 476–77 (1996) (stating that \$14,370 is typical “cradle-to-grave” prosecution cost); Virginia S. Medlen & Roger S. Smith, *How to Decide Whether to Obtain a Patent: Practical Considerations*, 343 PRACTISING L. INST. 99, 104 (1992) (the average cost for investment for a utility patent in the United States is roughly \$15,000).

<sup>288</sup> *Compare Fee Schedule*, UNITED STATES PATENT AND TRADEMARK OFFICE, <http://www.uspto.gov/web/offices/ac/qs/ope/fee2009september15.htm> (last visited Nov. 8, 2010) (indicating the cost of patents), *with Copyright Fees*, U.S. COPYRIGHT OFFICE, <http://www.copyright.gov/docs/fees.html> (last visited Nov. 8, 2010) (indicating the cost of various copyrights).

<sup>289</sup> See Long, *supra* note 193, at 656–57.

<sup>290</sup> See *id.* at 626–27 (discussing costs of obtaining patents and arguing that, economically, there must be some value obtained, even from “worthless” patents).

<sup>291</sup> *Id.* at 627 (“Possession of a portfolio of intellectual property rights is an attribute that is voluntary, under a firm’s control, and readily measurable, at least along some margins. If an easily measurable firm attribute such as patent counts is positively correlated with other less readily measurable firm attributes such as knowledge capital, then patent counts can be used as a means of conveying information about these other attributes.”).

<sup>292</sup> See *id.* at 644.

<sup>293</sup> The term “legitimizing” is used here to describe the way a patent may be used as evidence against illegal activity.

exception.<sup>294</sup> Where a firm owns at least one business method patent, that patent can act as a signal, informing potential customers or investors of the legality of a firm's practices. Where a firm owns a large patent portfolio, that signal may be even stronger.

### 5. The Law and Industry Interaction

The history of business methods, like computer programs, demonstrates the simultaneous evolution of law and industry. In the first instance, the trend toward economics as a field of technology makes economics studies "feel" more patentable. Indeed, Professor John Duffy has argued that this shift was "the catalyst for the burgeoning number of business method patents."<sup>295</sup>

As the business industry increasingly became technology-oriented, the legal world began to react. The first Manual of Patent Examining Procedure ("MPEP"), published in 1949, treated business methods as one of four exceptions to patentable subject matter.<sup>296</sup> In 1995, the USPTO published a revised edition of the MPEP that no longer listed business methods as a special exception to patentable subject matter.<sup>297</sup>

The USPTO's view officially changed with the removal of the business method exception from the MPEP, but it had unofficially withdrawn its support for the exception *at least* two years prior. The patent at issue in *State Street* was filed in 1991, and the USPTO issued a patent in 1993.<sup>298</sup> With the *State Street* decision in 1998, the judiciary simply followed the USPTO's example in holding that there is no business method exception. Further, *State Street* noted that business methods should have been patentable since the 1952 Act.<sup>299</sup> The forty-six year lapse between when business methods "should have been" made patentable and when the judiciary made them such was a time of

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<sup>294</sup> See *supra* Part IV.B.2.

<sup>295</sup> Duffy, *supra* note 244, at 17.

<sup>296</sup> MPEP, *supra* note 29, at § 706.03(a) ("Though seemingly within the category of an 'art' or method, the law is settled that a method of doing business can be rejected as not being within the statutory classes [of patentable subject matter].") (alterations in original).

<sup>297</sup> *Id.* § 706.03(a)(1).

<sup>298</sup> See U.S. Patent No. 5,193,056 (filed Mar. 11, 1991) (issued Mar. 9, 1993).

<sup>299</sup> *State St. Bank & Trust Co. v. Signature Fin. Grp., Inc.*, 149 F.3d 1368, 1375 (2d Cir. 1998).

major change in the business industry. The two institutional changes, at the PTO and the Federal Circuit, occurred with the culmination of this industrial shift.

Around the turn of the century, two separate groups of legal events occurred to induce firms to file business method patent applications. The first, the *State Street* decision itself,<sup>300</sup> certainly made patent attorneys and businessmen aware of the potential for business method patents.<sup>301</sup> The financial and tax scandals, the second group, provided the incentive for businessmen to file patent applications.<sup>302</sup> Because of the signals patents can send, firms with business method patents may be able to improve public confidence in light of recent financial scandals—which in turn, would improve profits.

## 6. Conclusion

The business method industry has evolved in a very similar manner to video games. Like video game programs and copyright, business methods easily fall under the subject matter of patent law, although the provision of patent protection to business methods went against well-established doctrine. This change in course by the courts was met with significant opposition, both within the courts and among commentators. Business method patents can send very important signals to consumers and investors. All said, business method patents have overcome similar hurdles, and provide similar benefits to computer program copyrights.

## V. WHAT COPYRIGHT CAN TEACH PATENT, AND HOW PATENT CAN APPLY THAT LESSON

The above reviews demonstrate that recent innovations have challenged the patent and copyright systems in very similar ways. The video game and business method industries are prime examples of the disparity between patent and copyright's abilities to expand to new areas. Both clearly fit within their intellectual property's statutory language, both have seen legal and market shifts occur which made them valuable enough to

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<sup>300</sup> *Id.* at 1368.

<sup>301</sup> AUTOMATED BUSINESS METHODS - WHITE PAPER, *supra* note 217, at IV(B).

<sup>302</sup> *See supra* Part IV.C.4.

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assert exclusive rights, and both are capable of emitting market signals.

Yet the fact remains that copyright is much more adaptable to the innovations it is meant to encourage, while patent law is much less so. Despite the fact that programs may fall within a statutory exception to copyright,<sup>303</sup> courts and commissions have stretched to define a distinction between the expressive content of computer programs and their functional aspects.<sup>304</sup> Business methods, on the other hand, clearly fall within the statutory subject matter but do not readily, or at least clearly, fit any exception.<sup>305</sup> At worst, they may fall under the algorithm or idea exceptions,<sup>306</sup> though business methods apply algorithms or ideas to a useful end, which should be enough to make them patentable.<sup>307</sup>

This distinction between patent and copyright is disconcerting for two related reasons. First, patent and copyright laws arise from the same source.<sup>308</sup> Second, like copyright, patent is intended to encourage the very innovation the law may be hindering.<sup>309</sup> With identity in source and purpose, the regimes

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<sup>303</sup> Depending on viewpoint, programs could be processes, methods, or systems—each of which is an exception to copyright law. *See* 17 U.S.C. § 102(b) (2010).

<sup>304</sup> *See, e.g., Apple Computer, Inc. v. Franklin Computer Corp.*, 714 F.2d 1240, 1251 (3rd Cir. 1983) (“Apple does not seek to copyright the method which instructs the computer to perform its operating functions but only the instructions themselves.”), *superseded by statute*, Semiconductor Chip Protection Act of 1984, Pub. L. No. 98-620, Title III, § 302, 98 Stat. 3353, *as recognized in* *Brooktree Corp. v. Advanced Micro Devices, Inc.*, 977 F.2d 1555 (Fed. Cir. 1992); CONTU REPORT, *supra* note 10, at 20.

<sup>305</sup> Recall that the business method exception has been “laid to rest” by the Federal Circuit. *State St. Bank & Trust Co. v. Signature Fin. Grp., Inc.*, 149 F.3d 1368, 1375 (2d Cir. 1998).

<sup>306</sup> *See* *Diamond v. Diehr*, 450 U.S. 175, 186 (1981) (noting that an algorithm “is like a law of nature, which cannot be the subject of a patent”).

<sup>307</sup> *See* *Funk Bros. Seed Co. v. Kalo Inoculant Co.*, 333 U.S. 127, 130 (1948), *abrogated by* *In re Bilski*, 545 F.3d 943 (2008) (holding that what renders subject matter patentable is “the application of the law of nature to a new and useful end.”); *AT&T Corp. v. Excel Commc’ns, Inc.*, 172 F.3d 1352, 1360 (Fed. Cir. 1999) (“[O]ur inquiry here focuses on whether the mathematical algorithm is *applied in a practical manner to produce a useful result.*”) (emphasis added).

<sup>308</sup> *See generally* Dotan Oliar, *The (Constitutional) Convention on IP: A New Reading*, 57 UCLA L. REV. 421 (2009) (discussing the Framers’ debates at the Constitutional Convention on the IP Clause).

<sup>309</sup> *See, e.g., Bilski*, 545 F.3d at 967–77 (Newman, J., dissenting) (“The innovations of the ‘knowledge economy’ of ‘digital prosperity’ have been dominant contributors to today’s economic growth and societal change. Revision of the commercial structure affecting major aspects of today’s industry should be approached with care, for there has been significant reliance on the

should be equally adaptive. So why does one regime adapt while the other languishes?

Examining the histories above, this Part attempts to answer that question. In doing so, it proposes a novel standard for determining patent eligibility that is based upon the success of copyright, but which does not diverge far from historical patent practice. The first section presents the groundwork for and reasoning behind the proposed standard. The second section presents the standard.

### A. *Defining Technology. . . Adaptively*

What exactly does copyright possess, but patent lacks, which allows copyright to adapt in situations where patent fails? The answer lies somewhere between the statutory language and judicial interpretation of that language.

Upon examination of the statutes, the first thing that stands out about the statutes is *what* they are directed at. Copyright is directed towards expression, an abstract idea in itself, while patent law has a specific subject matter list.<sup>310</sup> This distinction, which is clear in the present patent and copyright statutes, is the key to copyright's adaptability and patent's inflexibility.

#### 1. Copyright's Expression

The law has not always been laid out this way. Copyrightable subject matter was once listed similarly to patent,<sup>311</sup> and it was

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law as it has existed, as many *amici curiae* pointed out. Indeed, the full reach of today's change of law is not clear, and the majority opinion states that many existing situations may require reassessment under the new criteria. Uncertainty is the enemy of innovation. *These new uncertainties not only diminish the incentives available to new enterprise, but disrupt the settled expectations of those who relied on the law as it existed.*" (emphasis added).

<sup>310</sup> See 17 U.S.C. § 102(a) (2010) (providing that copyright protection subsists in "original works of authorship fixed in any tangible medium of expression"); 35 U.S.C. § 101 (2010) (providing patent protection for "any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof"). Supposedly, patent protection reaches "anything under the sun that is made by man." *Diamond v. Chakrabarty*, 447 U.S. 303, 309 (1980), but this is clearly not so. See *Bilski*, 545 F.3d at 949–51 (finding that a "method for managing the consumption risk costs of a commodity," is an unpatentable method clearly made by man).

<sup>311</sup> See Copyright Act of March 4, 1909, 17 U.S.C. § 1(b)-(e) (1970) (providing various rights in the work "if it be a" literary work, nondramatic work, drama,

not until 1976 that the term “expression” was first included in the statutory language.<sup>312</sup> This statutory lack went unnoticed: courts looked for expression in copyright long before the statute referenced it.<sup>313</sup>

Photographs, for example, are “reproduction[s] . . . of the exact features of some natural object.”<sup>314</sup> The creation of photographs also requires some degree of assistance from a purely technological intermediary – the camera. Yet none of this sufficed to remove photographs from the ambit of copyright’s expression.<sup>315</sup> For example, the Supreme Court, in finding photographs copyrightable, actively sought for some form of expression, despite the fact that the statute made no express reference to expression.<sup>316</sup>

## 2. Patentable Subject Matter

On the other hand, rather than concentrating on the purposes of patent law, courts have attempted without fail to shoehorn new innovations into (or in some cases, out of) one of the specified subjects of Section 101. In the end, the patent eligibility of a given invention is based largely on how “technological” that invention appears to be.<sup>317</sup> Problematically, the judiciary’s view of “technology” is rooted in a vastly different technological age.<sup>318</sup>

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musical work, or a model or design for a work of art).

<sup>312</sup> See 17 U.S.C. § 102(a) (1976).

<sup>313</sup> See, e.g., *White-Smith Music Pub. Co. v. Apollo Co.*, 209 U.S. 1, 20 (1908) (recognizing works of music are deserving of protection); *Burrow-Giles Lithographic Co. v. Sarony*, 111 U.S. 53, 55 (1884) (recognizing dramatic productions are deserving of protection).

<sup>314</sup> *Burrow-Giles*, 111 U.S. at 56.

<sup>315</sup> See *id.* at 55; *Time Inc. v. Bernard Geis Assocs.*, 293 F. Supp. 130, 141 (S.D.N.Y. 1968).

<sup>316</sup> See *id.* The statute itself contained a list akin to the present patent list. See 60 Revised Statutes ch. 3, § 4952 (1873).

<sup>317</sup> See Brief for International Business Machines Corporation as Amicus Curiae Supporting Neither Party at 8–16, *Bilski v. Doll*, 129 S.Ct. 2735 (2009) (No. 08-964), 2009 WL 2418481 (arguing that patent law is “tethered” to technology); James S. Sfeekas, *Controlling Business Method Patents: How the Japanese Standard for Patenting Software Could Bring Reasonable Limitations to Business Method Patents in the United States*, 16 PAC. RIM. L. & POL’Y J. 197, 214–15 (2007) (“[T]he Court’s holdings in *Benson* and *Diehr* are really stating a requirement that inventions must be technological.”) (emphasis added).

<sup>318</sup> John R. Thomas, *The Patenting of the Liberal Professions*, 40 B.C. L. REV. 1139, 1139 (1999) (“[Patent’s] plodding acquisition procedures and formal enforcement analyses historically confined themselves to the artifacts of the Industrial Revolution and their immediate successors.”). See also *In re Bilski*,

More often than not, inventions that have a historically technological feel to them are found patentable. For example, two seminal decisions have reached different outcomes on substantially similar facts. In the first, Judge Learned Hand held that a purified natural substance was patentable.<sup>319</sup> Though Judge Hand recognized that the patent was essentially directed towards a product of nature,<sup>320</sup> he believed that because “commercially and therapeutically,” the innovation was novel, it was entitled to patent protection.<sup>321</sup>

The second decision involved inoculating bacteria. In *Funk Bros. Seed Co. v. Kalo Inoculant Co.*,<sup>322</sup> the Supreme Court dealt with a patent for a product with select strains of the inoculating bacteria.<sup>323</sup> At least six species of bacteria in the *Rhizobium* genus were known to infect various leguminous plants, but no species worked on all leguminous plants.<sup>324</sup> Mixed cultures were created, but bacterial strains demonstrated an inhibitory effect on each other.<sup>325</sup> Thus, a farmer with multiple crops would likely need to use multiple inoculants.<sup>326</sup> The patent at issue was for a product that included multiple *Rhizobium* strains that did not inhibit each other; one product could therefore be used on multiple plants.<sup>327</sup> The Supreme Court noted that the inventor “d[id] not create [the] state of inhibition or of non-inhibition in the bacteria. Their qualities are the work of nature.”<sup>328</sup> Further, the Court stated that “aggregation of species fell short of invention within the meaning of the patent statutes.”<sup>329</sup> In terms

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545 F.3d 943, 1011 (Fed. Cir. 2008) (Rader, J., dissenting) (“[T]his court . . . links patent eligibility to the age of iron and steel at a time of subatomic particles and terabytes . . . .”); *Id.* at 978 (Newman, J., dissenting) (“[T]his court now adopts a redefinition of ‘process’ in Section 101 that excludes forms of information-based and software-implemented inventions arising from new technological capabilities . . . .”).

<sup>319</sup> *Parke-Davis & Co. v. H.K. Mulford Co.*, 189 F. 95, 103 (C.C.S.D.N.Y. 1911) (L. Hand, J.), *aff’d in part, rev’d in part*, 196 F. 496 (2d Cir. 1912) (holding purified adrenaline was patentable).

<sup>320</sup> *Id.* (“[I]t is of course possible logically to call this a purification of [a] principle [of nature]. . . .”).

<sup>321</sup> *Id.*

<sup>322</sup> 333 U.S. 127 (1948).

<sup>323</sup> *Id.* at 129.

<sup>324</sup> *Id.*

<sup>325</sup> *Id.* at 129-30.

<sup>326</sup> *Id.* at 129.

<sup>327</sup> *Id.* at 130.

<sup>328</sup> *Id.*

<sup>329</sup> *Id.* at 131.

of numbers, however, that aggregation was more complicated than *Parke-Davis*,<sup>330</sup> where only one substance was purified.<sup>331</sup>

Viewing the innovations this way, it is difficult to reconcile these two decisions. It is even more difficult to reconcile *Funk* with the patent eligibility of metal alloys. Metal alloys, like the *Funk* inoculants, are simply the combination of particularly selected materials, combined in a specific way.<sup>332</sup> Indeed, as in *Funk*, the materials are chosen specifically because of their natural characteristics.<sup>333</sup>

Reconciliation is perhaps easiest when one views this history with a pragmatic eye. Logically, there is very little to distinguish *Funk*'s patented product from a metal alloy or a purified naturally occurring chemical. When one asks "how technological do these inventions appear," the distinction becomes readily apparent. Patent law has traditionally been tied to technology,<sup>334</sup> so this showed as no surprise. And "technology," as it has been delineated in patent law, is closely tied to historically technological fields.<sup>335</sup> It goes without saying that the chemistry

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<sup>330</sup> See generally *Parke-Davis & Co. v. H.K. Mulford Co.*, 189 F. 95, 97–98 (S.D.N.Y. 1911) (presenting a patent for the purification of a naturally occurring substance).

<sup>331</sup> Both *Parke-Davis*, 189 F. 95, 97–98, 99–100, 113–15 and *Funk Bros. Seed Co. v. Kalo Inoculant Inc.*, 333 U.S. 127, 128–31 (1948) (presenting a patent for the purification of several unique strains of bacteria by removal from their inhibitive relatives), involved patents that yielded commercially beneficial products through purification.

<sup>332</sup> See, e.g., U.S. Patent No. 7,682,468 (filed Aug. 10, 2007) (issued March 23, 2010) (describing a lead-free solder alloy); U.S. Patent 7,682,470 (filed April 4, 2006) (issued March 23, 2010) (describing a magnesium alloy).

<sup>333</sup> See *Funk Bros.*, 333 U.S. at 134–35 (Frankfurter, J., concurring) ("Everything that happens may be deemed 'the work of nature,' and any patentable composite exemplifies in its properties 'the laws of nature.'").

<sup>334</sup> See *Sfekas supra* note 317, at 200. "Congress created the...Federal Circuit as an exclusive appellate court for patent cases" in the hopes that "increased uniformity would 'strengthen the United States patent system in such a way as to foster technological growth and industrial innovation.'" *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 390 (1996) (emphasis added) (citations omitted). See also *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 150–51 (1989) ("The federal patent system thus embodies a carefully crafted bargain for encouraging the creation and disclosure of new, useful, and nonobvious *advances in technology and design* in return for the exclusive right to practice the invention for a period of years.") (emphasis added); *Paulik v. Rizkalla*, 760 F.2d 1270, 1276 (Fed. Cir. 1985) (en banc) (suggesting that to be patentable, a claim must further the "purpose of advancing the useful arts -- the process today called technological innovation").

<sup>335</sup> See *Great Atlantic & Pac. Tea Co. v. Supermarket Equip. Co.*, 340 U.S. 147, 154 (1950) (Douglas, J., concurring) ("The Framers plainly did not want those monopolies freely granted. The invention, to justify a patent, had to serve

and metallurgy critical to the results in *Parke-Davis* and alloy patents are much more historically “technological” than the seemingly simple pick-and-choose in *Funk*.

### B. Application of the Laws of Nature

This detrimental dependence upon “technological” processes, machines, manufactures, or compositions of matter has not been without merit. Through its occasional attempts to define technology, the judiciary has created a potential escape route from the overly rigid technological orientation that has hindered patent’s adaptation to new technology.

At times, instead of concentrating on whether an innovation is technological, courts have instead examined what technology is.<sup>336</sup> According to one opinion, “[a]pplying laws of nature to new and useful ends is nothing other than ‘technology.’”<sup>337</sup> Therein lays the key to an adaptive test for patent eligibility : does the invention or discovery *apply* an idea, law of nature, or natural phenomenon to a useful end.

The term “application” is clearly definable. Merriam-Webster defines application as “an act of applying [or] an act of putting to use.”<sup>338</sup> The definition of application is not likely to change,

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the ends of science -- to push back the frontiers of *chemistry, physics, and the like . . .*”) (emphasis added); *see also* Long, *supra* note 193, at 632 (noting that “it is difficult to find a model or theory that describes the private benefits of patents as based on anything other than the capture of rents in the relevant product market for the technology or an improvement on the technology”).

<sup>336</sup> *See, e.g., Bonito Boats*, 489 U.S. at 149–51 (discussing the requirement that subject matter for which patents are sought be novel, nonobvious, and utilitarian); *Diamond v. Chakrabarty*, 447 U.S. 303, 316 (1980) (noting the most beneficial inventions are those that “push back the frontiers of chemistry, physics, and the like”) (citation omitted); *Great Atl. & Pac. Tea Co.*, 340 U.S. at 152 (noting the elements of an invention must “contribute something” and “take on some new quality or function from being brought into concert”); *Rizkalla*, 760 F.2d at 1276 (discussing the purpose of the patent system); *see also* Sfekas, *supra* note 317, at 214–15 (arguing WHITE PAPER AUTOMATED BUSINESS METHODS WHITE PAPER AUTOMATED BUSINESS METHODS patentable inventions do not have to be technological).

<sup>337</sup> *In re Bilski*, 545 F.3d 943, 1003 (2008) (Mayer, J., dissenting). This view is corroborated by the technological orientation of patent law. *See AT&T Corp. v. Excel Commc’ns*, 172 F.3d 1352, 1360 (stating the appropriate inquiry is “whether the [invention] is applied in a practical manner to produce a useful result”); *Funk Bros. Seed Co. v. Kalo Inoculant Inc.*, 333 U.S. 127, 130 (1948) (what renders subject matter patentable is “the application of the law of nature to a new and useful end.”).

<sup>338</sup> *Definition of Application*, MERRIAM-WEBSTER DICTIONARY,

unlike the definition of technology.<sup>339</sup> Tying patent eligibility to “application” ensures that patent law can readily adapt to technological advancements – as long as some unknown future discovery is applied to reach a useful result,<sup>340</sup> it qualifies for patent protection. Like copyright’s “expression,” application does not limit patent to modes of technology presently in existence.<sup>341</sup>

The *Bilski* patent, for example, satisfies the application test. The patent claimed “[a] method for managing the consumption risk costs of a commodity sold by a commodity provider at a fixed price.”<sup>342</sup> Algorithms are “fundamental principles,” like ideas, laws of nature, and natural phenomena.<sup>343</sup> This principle is applied, by way of a method, to achieve the useful result of managing risk.<sup>344</sup> Admittedly, the application of an algorithm or idea in *Bilski* may be too broadly claimed, but breadth does not lead to an innovation’s lack of patent eligibility under § 101. Rather, such breadth can be addressed by other sections under Title 35.<sup>345</sup>

The proposed application standard makes patent law more capable of handling technological advancements. It eliminates unnecessary limitations on the scope of patentable subject matter, and ensures that “anything under the sun that is made by man”<sup>346</sup> is patentable, while ensuring that any underlying

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<http://www.merriam-webster.com/dictionary/application> (last visited Nov. 8, 2010).

<sup>339</sup> See *supra* Part IV.B.1; Lyria Bennett Moses, *Recurring Dilemmas: The Law’s Race to Keep Up with the Technological Change*, U. ILL. J.L. TECH. & POL’Y 239, 243–45 (2007) (discussing the controversy surrounding the definition of technology given the numerous fields in which technology can be applied).

<sup>340</sup> 35 U.S.C. § 101 (2010) (instructing that usefulness is required to patent an invention).

<sup>341</sup> See 17 U.S.C. § 102(a) (2010) (extending copyright protection to works fixed in mediums to be developed later in time).

<sup>342</sup> *Bilski*, 545 F.3d at 949.

<sup>343</sup> See *id.* at 961 (“The same reasoning applies when the claim at issue recites fundamental principles other than mathematical algorithms.”); *id.* at 952.

<sup>344</sup> See *In re Bilski*, 545 F.3d 943, 949 (2008); *Diamond v. Diehr*, 450 U.S. 175, 192 (1981) (recognizing that the application of a formula “in a structure or process” satisfies the requirements of § 101) (emphasis added).

<sup>345</sup> *Bilski*, 545 F.3d at 1015 (Rader, J., dissenting) (“Even beyond the exclusion for abstractness, the final clause of section 101—‘subject to the conditions and requirements of this title’—ensures that a claimed invention must still satisfy” other requirements such as novelty, non-obviousness and enablement)(citation omitted).

<sup>346</sup> S. REP. NO. 82-1979, at 5 (1952), *reprinted in* 1952 U.S.C.C.A.N. 2394, 2399.

ideas, laws of nature, and natural phenomena are left for the public to use as they will.

## VI. CONCLUSION

As innovation leads to potential new subject matter, patent and copyright must adapt to these innovations. The two regimes deal with very similar issues as this adaptation occurs. The interplay between law and industry when subject matter issues arise is usually quite apparent.

Copyright in video game programs provides an excellent view into this interaction. As computer programming became more commonplace, copyright law quickly adapted to ensure that computer programs were protected. Based on discussions in Congress and in legal scholarship, it appears that video games were completely unforeseen. And despite strong opposition to copyright protection for computer programs, both the software and video game industries have continued to grow.

The evolution of law and industry as it pertains to business methods mirrors video game copyrights, except possibly for the provision of protection. As financial industries became more technological, courts and the PTO began to whittle away at the bar to patent eligibility. This trend has been the target of significant opposition from courts and commentators alike.

Despite opposition, courts must be careful as they may unintentionally bar unknown future technologies from protection. This concern is not a major issue in copyright, which adapts to new technologies in large because expression is clear. Patent law, which has focused on the term “technology,” does not adapt as readily, perhaps because technology is difficult to define. Additionally, by tying the patent eligibility of a method to a machine or transformation, the Federal Circuit has limited patentable subject matter to only a subset of technology.

Based on the observable success copyright has had through its use of expression as its defining characteristic, this article proposes a similar gateway for patent law. By making patentable anything that applies an idea, law of nature, or phenomenon, the difficulty in defining technology disappears. An application standard limits concerns over subject matter decisions blocking unknown future innovations, which would otherwise qualify for patent protection. Application, like expression, is a readily ascertainable standard that ensures easy

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adaptation to new technologies. In doing so, it furthers the patent goal of fostering innovation.