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## Towards a Doctrine of Fair Use in Some of Patent Law

# Towards a Doctrine of Fair Use in *Some* of Patent Law

by Joshua I. Miller\*

## I. INTRODUCTION

Historically, the Supreme Court has compared patent and copyright laws.<sup>1</sup> These comparisons frequently result in the application of some patent doctrines to copyright law.<sup>2</sup> For example, the Supreme Court derived copyright's secondary liability standard from patent law.<sup>3</sup> Following the Court's example, several circuit courts have read patent standards into copyright law.<sup>4</sup>

The doctrinal overlap, evidenced by the cross application of these standards, is not surprising given the close relationship between the copyright and patent regimes.<sup>5</sup> Both patent and copyright arise from the Constitution's Progress Clause, which grants Congress the power to "promote the Progress of Science and the Useful Arts, by securing for limited Times to Authors

and Inventors the exclusive Right to their respective Writings and Discoveries."<sup>6</sup> Both laws enable owners of intangible property to recover for infringement of that property.<sup>7</sup> Even with the judicial recognition of a close relationship between the regimes, recent scholarship suggests that the two regimes' constitutional relationship is even closer than is widely accepted.<sup>8</sup>

Problematically, some courts have "delegated" potentially copyrightable material to patent law.<sup>9,10</sup> By excluding these subject matter areas from copyright, courts have withdrawn certain limitations on exclusive rights that could otherwise apply. Specifically, fair use is a limiting doctrine in copyright law that enhances the promotion of progress mandated by the Progress Clause, but the doctrine is not applied in patent law.

Copyright's fair use doctrine is used to promote progress in several ways. Although copyright can act to restrict free speech, the Framers intended that it operate to the contrary.<sup>11</sup> The mechanism of fair use ensures that copyright remains "the engine of free expression," and that it does not offend the First Amendment. Fair use, therefore, operates to ensure that copyright works towards its intended purpose.<sup>12</sup>

Perhaps more importantly, at least from the standpoints of economics and progress, fair use operates

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1. See, e.g., *Eldred v. Ashcroft*, 537 U.S. 186, 188 (2003) (noting in a copyright case that "the Court's inquiry is significantly informed by the fact that early Congresses extended the duration of numerous individual patents as well as copyrights" and that "the Court has found no constitutional barrier to the legislative expansion of existing patents"); *Baker v. Selden*, 101 U.S. 99, 102 (1879) (comparing the "province" of patent and copyright).

2. See, e.g., *Sony Corp. of Am. v. Universal City Studios, Inc.*, 464 U.S. 417, 440-42 (1984) (importing patent's staple article doctrine into copyright); *Metro-Goldwyn-Mayer Studios, Inc. v. Grokster, Ltd.*, 545 U.S. 913, 935 n.10 (2005) (noting that patent law's staple article doctrine does not exempt from liability those who induce infringement).

3. See *Sony*, 464 U.S. at 440-42 (importing the "staple article" doctrine as safe harbor to secondary liability for copyright infringement); see also *Grokster*, 545 U.S. at 936 (holding that patent's inducement rule is "a sensible one for copyright").

4. The best example of this is the standard for copyright misuse, which was first imported into copyright by the Fourth Circuit. See *Lasercomb America, Inc. v. Reynolds*, 911 F.2d 970, 973 (4th Cir. 1990). Other circuits followed the Fourth Circuit's example in adopting a copyright misuse standard. See *A&M Records, Inc. v. Napster, Inc.*, 239 F.3d 1004, 1026-27 (9th Cir. 2001); *DSC Communications Corp. v. DGI Techs., Inc.*, 81 F.3d 597, 601 (5th Cir. 1996).

5. See Dotal Oliar, *The (Constitutional) Convention on IP: A New Reading*, 57 UCLA L. REV. 421, 463-69 (2009) (suggesting that the IP Clause should not be read disjunctively). Cf. Karl B. Lutz, *Patents and Science: A Clarification of the Patent Clause of the U.S. Constitution*, 18 GEO. WASH. L. REV. 50, 51 (1949) (presenting the IP Clause as providing two independent powers).

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6. U.S. Const. art. I, § 8, cl. 8.

7. See 17 U.S.C. § 501 (copyright infringement); 35 U.S.C. § 271 (patent infringement).

8. See Oliar, *supra* note 5, at 463-69.

9. See Maureen A. O'Rourke, *Toward a Doctrine of Fair Use in Patent Law*, 100 COLUM. L. REV. 1177, 1228 (2000) (discussing the delegation of application programming interfaces to patent law); *id.* at 1211 (questioning if patent law is the best form of intellectual property protection for APIs, which are the "connectivity components of operating systems that specify how a particular operating system and its applications communicate").

10. See Pierre N. Leval, *Toward a Fair Use Standard*, 103 HARV. L. REV. 1105, 1135 (1990) (stating that "copyright often results in suppression of speech").

11. *Harper & Row Publ'rs Inc. v. Nation Enters.*, 471 U.S. 539, 558 (1985) ("[T]he Framers intended copyright . . . to be the engine of free expression.").

12. See generally Wendy J. Gordon, *Fair Use as Market Failure: A Structural and Economic Analysis of the Betamax Case*, 82 COLUM. L. REV. 1600 (1982) (illustrating how courts have employed fair use to remedy market failure).

to remedy market failures.<sup>1314</sup> From an economic perspective, copyright presumes that the market will operate to serve social purposes.<sup>15</sup> A market failure arises where a socially desirable transfer is unlikely to occur, such that there is an economic need for allowing nonconsensual transfer.<sup>16</sup> Examples of market failure include barriers to entry and the use of intellectual property rights to control the flow of information.<sup>17</sup> Copyright can create these types of market failure.<sup>18</sup> Where such failures occur, copyright operates to inhibit progress, rather than promote it. In these situations, fair use can act to remedy the market failure.<sup>19</sup>

Unlike copyright, patent law has traditionally been centered on mechanical technologies.<sup>2021</sup> These scientific and technological fields have not generally been susceptible to market failure concerns.<sup>22</sup> However, since the 1950s, non-mechanical fields have become increasingly important in intellectual property law.<sup>23</sup> Software and business methods are among these non-mechanical fields.<sup>24</sup> Unlike most historically patent-

eligible fields, these new fields are susceptible to special market failure concerns.<sup>25</sup> Despite these evolving concerns regarding new technological fields, patent law does not have any limiting doctrines equivalent to copyright's fair use doctrine.<sup>26</sup>

Professor Maureen O'Rourke has made an in-depth proposal to address patent's lack of a fair use standard. She proposed a five-factor test for patent fair use: (i) the nature of the advance represented by the infringement, (ii) the purpose of the infringing use, (iii) the nature and strength of the market failure that prevents a license from being concluded, (iv) the impact of the use on the patentee's incentives and overall social welfare, and (v) the nature of the patented work.

This paper agrees with Professor O'Rourke's general thesis – patent law does need a fair use doctrine. This paper also differs from Professor O'Rourke's proposal regarding implementation of fair use in patent law, arguing instead that patent's fair use doctrine should be technology-specific: fair use does not need apply to all industries, but should instead only apply to industries and technologies that raise network effect concerns. Network effects arise in relation to a particular product or innovation when each unit of that product becomes more valuable as more people use it. Network effects can make market entry incredibly difficult, and can also enable small groups of firms to control the flow of information, both of which are forms of market failure.

This paper argues that patent law should have a fair use standard that is applicable only to those technological industries that can benefit the most from the standard. Part II discusses justifications, including those discussed by Professor O'Rourke, for importing a fair use standard into patent law. Part II first presents structural arguments based on the similarities between patent and copyright and then proceeds to present arguments for patent fair use based on market and legal shifts. Part III argues that a technology-specific application of the fair use doctrine can adequately address the concerns raised in Part II. Part IV proposes a modified version of Professor O'Rourke's fair use

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13. *Id.* at 1614 (“courts in the copyright area ordinarily assume that reliance on the market will serve social purposes”).

14. *Id.* at 1615 (discussing market failure).

15. *Id.* at 1627-30 (discussing barriers to entry as a market failure); *id.* at 1632 (discussing control of information flow as a market failure).

16. *See id.* at 1627-30 (discussing copyright as a barrier to entry); *id.* at 1632 (discussing the use of copyright to control the flow of information).

17. *See, e.g., id.* at 1601 (noting that fair use has been used to permit uncompensated transfers “not capable of effectuation through the market.”).

18. *See* Dan L. Burk & Mark A. Lemley, *Is Patent Law Technology-Specific?*, 17 *BERKELEY TECH. L.J.* 1155, 1159 (2002) [hereinafter *Technology-Specific*] (noting that most inventions were still mechanical in the 1950s, although newer technologies, including software, have become more important).

19. *See* O'Rourke, *supra* note 9, at 1197 (noting that the justifications for fair use have “seldom been implicated in patent law.”).

20. *See Technology-Specific, supra* note 18, at 1159 (noting that patent has lost its “primarily mechanical character” over the last half-century as patent has embraced biotechnology, semiconductors, computer hardware and software, electronics, and communications).

21. *See id.* (noting the expansion of patent to software); *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> (presenting data on increase in business method patent applications).

22. Since both fields are also subject to network effects, they raise special market failure concerns. *See infra* Part III.

23. *See* O'Rourke, *supra* note 9, at 1193 (“a brief review shows that while some of patent's scope-limiting devices bear a surface resemblance to copyright fair use, none, alone or in combination with others, functions as its equivalent.”).

24. *Id.* at 1205.

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25. *See infra* Part III. Microsoft Windows, for example, is a product exhibiting strong network effects. As more people use Windows, it becomes more valuable because more programmers will produce compatible software. As some software becomes exclusively available on Windows, more people will want access to Windows. As demand increases, so does cost.

26. *See* Gordon, *supra* note 12, at 1627-32 (referring to both barriers to entry and information flow as market failures).

standard that removes much of the recognized difficulty in Professor O'Rourke's proposal. Part V offers some observations in conclusion

## II. JUSTIFICATIONS FOR FAIR USE IN PATENT LAW

Comparisons between the copyright and patent regimes are becoming more pertinent as the subject matter of the two regimes increasingly overlaps.<sup>27</sup> Four separate "structural" areas inform such comparisons, and each area supports a fair use standard in patent law. Beyond these structural issues, concurrent market and legal shifts also support the application of fair use to patent law.

### A. Structural Issues

The Progress Clause grants Congress the power to pass both copyright and patent laws.<sup>28</sup> The Progress Clause is commonly read in the disjunctive; in other words, it is assumed that there are two separate powers contained within the Progress Clause.<sup>29</sup> The first is the power "to promote the progress of science, by securing for limited times to authors the exclusive right to their writings," referring to copyright law.<sup>30</sup> The other is the power "to promote the progress of useful arts, by securing for limited times to inventors the exclusive right to their discoveries," referring to patent law.<sup>31</sup> Recent scholarship indicates that the "two" clauses were not intended to be separate, but were originally intended to complement each other.<sup>32</sup> If the two clauses are indeed as closely related as suggested by that scholarship, then perhaps there should be even more doctrinal overlap than the courts have recognized, including a fair use standard in patent law.

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27. For example, business methods and software are both potentially patentable. See *Bilski v. Kappos*, 130 S.Ct. 3218, 3228 (2010) (stating that the term "method" in the Patent Act "may include at least some methods of doing business."); *Id.* at 3227 (noting that computer programs may be patentable). Additionally, they may both be copyrightable. It is well established that software may be copyrightable. See *Apple Computer, Inc. v. Franklin Computer Corp.*, 714 F.2d 1240 (3d Cir. 1983) (holding computer programs copyrightable). Similarly, if business method patents place restriction on "human activity," as Judge Dyk of the Federal Circuit has said, then they may apply to expressive content, which is copyrightable. See *In re Bilski*, 545 F.3d 943, 970 (Fed. Cir. 2008) (Dyk, J., concurring) (describing business method patents as placing limitations on "human activity").

28. U.S. Const. art. I, § 8, cl. 8.

29. See Lutz, *supra* note 5, at 51 (presenting the Progress Clause as providing two independent powers).

30. See Oliar, *supra* note 5, at 463 (describing the disjunctive copyright power).

31. See *id.* (describing the disjunctive patent power).

32. See *id.* at 463-69 (discussing the roots of the IP Clause in James Madison's and Charles Pinkney's proposals).

The two regimes also share similar theoretical underpinnings in implementation. In both regimes, the constitutional requirement of promoting progress is commonly viewed as a requirement to encourage innovation.<sup>33</sup> Encouraging innovation is necessary because intellectual property rights are public goods – once information is made public, more than one person can consume it without depleting anyone else's share, and the originator cannot easily recover for the use of others.<sup>34</sup> Both regimes seek to balance encouraging innovation with the ability to innovate further.<sup>35</sup> In both regimes, these goals are achieved by providing a list of rights and standards of infringement from which an owner can recover.<sup>36</sup> Both regimes are directed toward balancing innovation with protecting an innovator's rights in his or her creation, and fair use helps copyright achieve this goal; therefore, it seems likely that fair use can provide similar assistance to patent law.

Third, it is notable that patent law has very strict standards, which must be met before any rights are created, while copyright has relatively few requirements.<sup>37</sup> Due in part to these strict standards, the patent right is significantly stronger than the copyright.<sup>38</sup> It is therefore easier for a single party to obstruct progress in a given field with a patent,

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33. See Carlos A. Primo Braga & Carsten Fink, *The Economic Justification for the Grant of Intellectual Property Rights: Patterns of Convergence and Conflict*, 72 CHL.-KENT L. REV. 439 (1996) (IP rights are "second-best solutions" to public good problems); William M. Landes & Richard A. Posner, *An Economic Analysis of Copyright Law*, 18 J. LEGAL STUD. 325, 326 (1989) (describing copyright as a trade-off between the costs of limited access and the benefits of providing incentives to create).

34. See, e.g., Robert Cooter & Thomas Ulen, *LAW & ECON.* 42-43 (3d ed. 1999) (characterizing public goods as defined by non-rivalrous consumption and nonexcludability); Mark A. Lemley, *The Economics of Improvement in Intellectual Property Law*, 75 TEX. L. REV. 989, 994-96 (1997) (describing a public good as one that "may be 'consumed' by many people without depletion").

35. See O'Rourke, *supra* note 9, at 1183 (patent and copyright "seek not only to reward the first-comer who originates a particular creation, but also to preserve sufficient information for the public to produce additional works.").

36. See 17 U.S.C. § 106 (enumerating the exclusive rights of copyright holders); 35 U.S.C. § 271(a) (granting patent owner the right to exclude others from "mak[ing], us[ing], offer[ing] to sell, or sell[ing]" a patented invention); see also 17 U.S.C. § 501 (providing for copyright infringement); 35 U.S.C. § 271 (providing for patent infringement).

37. Compare 35 U.S.C. §§ 101, 102, 103 and 112 (requiring proper subject matter, novelty, non-obviousness and enablement for an invention to be patentable) with 17 U.S.C. § 102(a) (requiring only that a work of authorship be fixed in a tangible medium of expression).

38. See O'Rourke, *supra* note 9, at 1186 (describing the patent right as "more extensive" than copyright).

particularly one that forms the foundation of an industry or product, than a copyright. The ability for one party to hinder innovation – and create market failures – when it acquires a foundational patent supports a call for a fair use standard in patent law, to allow access for a follow-on innovator to that area of technology.

Lastly, the two regimes employ different schemes to limit the scope of the right conveyed, and these schemes make it is easier for copyright to adapt to meet new and innovative uses of protected subject matter.<sup>39</sup> The scope of a patent is established during the Patent and Trademark Office’s examination of a patent application.<sup>40</sup> Once granted, the patent’s scope is defined by its claims.<sup>41</sup> The scope of a copyright, on the other hand, is largely established after creation, frequently through fair use.<sup>42</sup> Fair use in patent would allow the law to adapt to changing circumstances after the issuance of the patent, just as it does in copyright.

## B. Market and Legal Shifts

Two related shifts also support the application of a fair use standard to patent law. The first is a market shift. The second is a general legal shift. These shifts have occurred together in something of a symbiotic relationship.

At first glance, it appears sensible that copyright law has a fair use standard while patent law does not. Because copyright applies to expression, including activity, while patent law is viewed as technology-oriented, copyright often runs afoul of the First Amendment because it can restrict expression and activity, while historically speaking, patent could not.<sup>43</sup> Copyright’s potential restriction on free speech

is a market failure because it acts as a control on the flow of information. Additionally, a given patent only restricts access to the innovation as claimed, while a given copyrighted work can restrict works merely based upon it.<sup>44</sup> A copyright may therefore cover more “things,” making market failure more likely to occur with a copyright.<sup>45</sup> Fair use acts to alleviate these ills by restricting the scope of the copyright.

These generalities of subject matter and scope hold true in the traditional patent technology areas, such as the mechanical arts. The traditional patentable mechanical areas can be claimed in relatively straightforward ways.<sup>46</sup> The doctrine of equivalents, the rule that an equivalent device or process can infringe a patent claim even if not within the literal scope of a patent claim, cannot easily extend a mechanical invention’s scope.<sup>47</sup> For example, depending upon the language used in the claim, a screw element in a patent claim can be equivalent to other fasteners, such as a

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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) (to be patentable, a claim must further the purpose “of advancing the useful arts - the process today called technological innovation.”). See also James S. Sfikas, *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 [Supreme] Court’s holdings in *Benson* and *Diehr* are really stating a requirement that inventions must be technological.”). But see *Oliar*, *supra* note 5, at 464-69 (discussing alternative interpretations of the Progress Clause that could result in patent protection for innovations outside the useful arts).

44. See 17 U.S.C. § 101 (defining a “derivative work” as “a work based upon one or more preexisting works”); 35 U.S.C. § 112 (“The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.”).

45. This statement appears to be contrary to that in the third structural point, *supra* Part II.A, but it is actually not. The only instances where patent creates broad barriers to entry are foundational patents. A patent on a device that comprises legs, a seat section, and a back would block most other forms of chair, including rocking chairs, couches, some stools, computer chairs, etc. However, such foundational patents are not the norm. Generally, patents only protect a species within a given genus, not the entire genus. Copyright, on the other hand, may easily cover more than a single species through its derivative works doctrine.

46. See *Burk & Lemley, Technology-Specific*, *supra* note 18, at 1159.

47. There are two tests under the doctrine of equivalents. The first, called the “triple identity” test, deems something equivalent if it: (1) performs substantially the same function; (2) in substantially the same way; (3) to yield substantially the same result. See *Graver Tank & Mfg. Co. v. Linde Air Products Co.*, 339 U.S. 605, 608 (1950). Second, something may be deemed equivalent if there is only an “insubstantial difference” between the accused device and the patented device. See *Warner-Jenkinson Co., Inc. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 39-40 (1997).

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39. *Id.* at 1184 (“[Patent law] is relatively less amenable than copyright to adjusting the scope of the right once granted.”).

40. See *id.* at 1186 (describing PTO examination as establishing the “metes and bounds of the inventor’s property right”).

41. 35 U.S.C. § 112 (“The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.”). Patent claims set out the “metes and bounds” of what the inventor claims as his invention. See *O’Rourke*, *supra* note 9, at 1186.

42. See *O’Rourke*, *supra* note 9, at 1184 (noting that copyright has “few requirements for initial protection,” but that it still has several scope-limiting doctrines).

43. See 17 U.S.C. § 106 (protecting public performance of a copyrighted work). See *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 390 (1996) (noting that the Federal Circuit was created 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.’”) (emphasis added); *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 150-151 (1989) (“The federal patent system thus embodies a carefully crafted bargain for encouraging

nail, a tack, or possibly even tape, but it is unlikely that the doctrine of equivalents will extend beyond such apparent equivalents. The determination of equivalence is somewhat simple and does not dramatically expand the scope of a patent.

As the technologies that patent law encompasses progress further from patent law's more traditionally mechanical roots, the equivalence doctrine becomes more nebulous, and accurate determinations of what constitutes an equivalent become more difficult. For example, in *Graver Tank*, expert witnesses were asked to ascertain the equivalence of two elements: manganese and magnesium.<sup>48</sup> *Graver Tank* presents a more difficult question than whether a nail and screw are similar, even though in *Graver Tank* the subject matter is much closer to mechanical than some fields now able to receive patent protection. In information technology fields, where terminology is still inconsistent across industries, questions of equivalence are more difficult still. Experts may prove to be of no service in these industries because of this inconsistency. Where two experts may refer to the same thing in different ways, or use the same terminology for two different things, the value of expert testimony in the equivalency determination is significantly diminished. As equivalency becomes more difficult to determine, the doctrine of equivalents can be manipulated to stretch the scope of a given patent, which increases the likelihood of market failure by increasing barriers to entry.

Technological evolution and the development of new technological fields have pushed the bounds of patent law, making old standards increasingly more difficult to apply to new innovations. Technology has introduced significant challenges based on its increasingly expressive content and its growing potential to induce market failure.<sup>49</sup>

Although patent law's increasing scope is at least partially due to technological advances, it appears that purely legal shifts have contributed to the increase as well. For example, some have argued that the consolidation of patent appeals in one court

has created a strong pro-patent bias.<sup>50</sup> Decisions such as *State Street Bank & Trust Co. v. Signature Financial Group, Inc.*,<sup>51</sup> are used as evidence of this pro-patent bias and are characterized as sweeping departures from precedent – in the case of *State Street*, for ignoring the “business method exception.”<sup>52</sup> Decisions like *State Street*, whether or not they evidence a pro-patent bias, have made clear that patent protection extends to new areas of innovation.

Regardless of the motivation – legal, technological, or a mixture of the two – the increasing scope of patent-eligible subject matter is undeniable. As market and legal shifts lead to eligibility for new, non-traditional subject matter, the likelihood increases that patent law will more frequently lead to undesirable market failures. Structural comparisons with copyright law and recent shifts in technology and patent law support importation of a fair use standard to patent law.

### III. TECHNOLOGY-SPECIFIC APPLICATION OF PATENT LAW

Historically, patent law has “worked” well. Seemingly, innovation has been encouraged, and patent law has generally expanded to encompass new technologies. However, the viability of patent law was not significantly tested outside mechanical fields until the last half of the twentieth century.<sup>53</sup>

Patent law is written as a general set of rules for a wide range of technologies.<sup>54</sup> However, patent law has not been applied consistently across technologies. While patent law only rarely distinguishes between industries on its face, courts have *sub silentio* applied different rules to different fields.<sup>55</sup> For example,

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50. See Peter S. Menell, *The Property Rights Movement's Embrace of Intellectual Property: True Love or Doomed Relationship?*, 34 *ECOLGY L.Q.* 713, 732 (2007) (“the unification of appellate decision making in a single body had the effect of creating a strong pro-patent bias in the interpretation of patent law.”).

51. See *State St. Bank & Trust Co. v. Signature Fin. Grp.* 149 F.3d 1368 (Fed. Cir. 1998) (holding business methods patentable).

52. See Leo J. 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) (characterizing *State Street* as “so sweeping a departure from precedent as to invite a search for its justification.”).

53. See Burk & Lemley, *Technology-Specific*, *supra* note 18, at 1159 (describing new technologies patent law has encompassed).

54. *Id.* at 1156 (describing patent law as “a general set of legal rules” applicable to “a wide variety of technologies.”).

55. See, e.g., 35 U.S.C. § 161 (providing standards for patenting plants); 35 U.S.C. § 103(b) (creating a special obviousness standard for biotechnology). See also Burk & Lemley, *Technology-Specific*, *supra* note 18; Dan L. Burk & Mark A. Lemley,

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48. See *Graver Tank*, 339 U.S. at 610-11 (discussing similarities and differences between manganese and magnesium).

49. See *In re Bilski*, 545 F.2d at 970 (Dyk, J., concurring) (describing business method patents as placing limitations on “human activity”). Also, because computer programs are copyrightable as “literary works,” *Apple Computer*, 714 F.2d at 1249, then they are a form of expression. See 17 U.S.C. § 102(a)(1).

biotech patents are more frequently found non-obvious than those from most industries, but they are also subject to more stringent enablement and written description requirements.<sup>56</sup> Software, on the other hand, has been “excused” from the enablement and best mode requirements.<sup>57</sup> The difficulty patent has had in consistency across technologies appears to be a thing of the recent past.

Patent law has some fair use-like doctrines,<sup>58</sup> but none of these doctrines, alone or in combination, function as the complete equivalent of fair use.<sup>59</sup> These doctrines are all rooted in mechanical industries that have historically been largely immune to market failures, but they do not adequately address new technologies.<sup>60</sup> Specifically, with the emergence of technological fields that raise network concerns, such as software and business methods, patent law is more likely to result in market failures including barriers to entry and the control of information flow.

Professor O’Rourke implicitly recognizes the point that network industries raise special market failure concerns. O’Rourke emphasizes one industry that could benefit most from a fair use standard: software.<sup>61</sup> Part of what makes software special in patent law is that it is among the new technological fields that exhibit strong network effects. Network effects arise when a good “provide[s] inherent value to consumers that increases with the number of additional users of identical and/or interoperable goods.”<sup>62</sup> The

value of software, especially operating system software, is largely dependent upon the number of people using it.<sup>63</sup> Business methods, particularly those used in online transactions, similarly become more valuable in each instance as the method becomes more universal.<sup>64</sup>

Network effect industries are susceptible to major market entry barriers, which are a strong form of market failure.<sup>65</sup> Network effect industries also enable one owner to control the flow of information by placing limitations upon access: some goods or application programs may only be available for purchase through certain business methods or on certain operating systems. Professor O’Rourke’s specific reference to network effects suggests that only those industries susceptible to these special concerns should have a fair use standard.<sup>66</sup>

Because fair use is designed to mitigate the harms of market failure due to the exercise of intellectual property rights, a workable patent fair use doctrine will remedy the market failures inherent in network industries. Limiting patent fair use to network industries further ensures that a fair use doctrine in patent would address the same concerns of the fair use doctrine in copyright; namely, it would act to cure market failures. This limitation to network industries also ensures that the fair use exception is not applied to traditional patent fields, which have historically been subject to innovation without a fair use doctrine.

#### IV. IMPLEMENTATION: A FOUR-FACTOR TEST FOR FAIR USE IN PATENT LAW

Professor O’Rourke proposed a five-factor test for determining whether use of a patented invention

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*Policy Levers in Patent Law*, 89 VA. L. REV. 1575 (2003).

56. Burk & Lemley, *Technology-Specific*, *supra* note 18, at 1156.

57. *See id.* (“The Federal Circuit has essentially excused software inventions from compliance with the enablement and best mode requirements”).

58. *See* O’Rourke, *supra* note 9, at 1192-93 (“The scope-limiting doctrines available to a patent court are the ability to re-evaluate the patent’s validity and construe its claims; the reverse doctrine of equivalents; the doctrine of blocking patents; the experimental use exception; and patent misuse.”).

59. *See id.* at 1193 (“a brief review shows that while some of patent’s scope-limiting devices bear a surface resemblance to copyright fair use, none, alone or in combination with others, functions as its equivalent.”).

60. *See id.* at 1197 (“the theoretical justification for copyright fair use--the ‘market failure’ rationale--historically has seldom been implicated in patent law.”). *See also infra* Part II.B.1 (discussing how the doctrine of equivalents does not adequately address new technologies).

61. *See id.* at 1211-35 (discussing software in the context of network effects).

62. Mark A. Lemley & David McGowan, *Legal Implications of Network Economic Effects*, 86 CAL. L. REV. 479, 491 (1998); *see* Peter S. Menell, *An Epitaph for Traditional Copyright Protection of Network Features of Computer Software*, 43 ANTITRUST BULL.

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651, 657 (1998) (“The defining feature of virtual networks is that the value of a product depends significantly on the value of the system in which it is a part. A critical determinant of the value of a product, therefore, is the range and value of components with which it is interoperable.”). Two prime examples of network effect goods are telephones and Microsoft Windows. *See generally* O’Rourke, *supra* note 9, at 1212 (introducing telephones as a network industry); *id.* at 1213 (discussing the network effects of Windows).

63. *See* O’Rourke, *supra* note 9, at 1213 (discussing Windows and compatibility issues).

64. Paypal is an example of a business method that gains value as it becomes more widely used. The more websites and people that use paypal, the more valuable it becomes.

65. *See id.* at 1179 (“in the market for operating systems software, which exhibits powerful network effects, strong patent protection can create an insurmountable barrier to entry while also allowing a single patentee to direct innovation in the market for applications running on the dominant system.”).

66. *See id.*, at 1212-19 (discussing network effects industries).

should qualify as fair use.<sup>67</sup> The first factor examines the incremental value of the infringement; the greater the innovation over the claimed invention, the more the first factor weighs in favor of fair use.<sup>68</sup> The second mirrors the copyright fair use inquiry, asking whether the infringing use is done for a non-commercial, indirectly commercial, or directly commercial use.<sup>69</sup> Use that is less commercial is more likely to be fair. The third factor examines the type of market failure that has led to the necessity of infringement.<sup>70</sup> The fourth factor corresponds to the copyright question of whether a work is transformative: if the infringing use does not adversely impact the market for the patented work, this factor supports a finding of fair use.<sup>71</sup> The fifth factor mirrors the first, except it examines the patented work: when the patented invention is less pioneering, fair use is likelier.<sup>72</sup>

The first and fifth factors bear examination because of the special concerns they raise in network markets. Just as the courts have difficulty determining the “value” of a work of art, and should therefore refrain from doing so, assigning a “value” to a given innovation presents difficult issues for a court and introduces substantial uncertainty into Professor O’Rourke’s proposed fair use test.<sup>73</sup> Courts should not be asked to make such difficult subjective determinations because they inject a substantial degree of uncertainty into the law.

While the risk of inconsistent subjective determinations is present in examining both factors, it is substantially greater in examining the accused infringing product. For the patented innovation, there will necessarily be evidence that speaks to the degree of innovation. The patent application itself presents evidence of what the inventor saw as prior art and how the inventor thought his invention improved upon the prior art.<sup>74</sup> Because the patented invention necessarily includes the patent’s prosecution history, there will be evidence that can provide useful insights

into the assumed contribution to the art at the time of patenting from the perspective of both the inventor and the Patent Office.

Unless the infringing invention is also patented, the infringing product may have no such prosecution history, which makes it particularly difficult for a court to accurately determine the value of that advance. Additionally, because a court would not need to reach the fair use question unless the follow-on innovation was within the scope of the patent’s claims, there is the additional likelihood of prejudice against the follow-on innovation in Professor O’Rourke’s proposed test. This is because the new innovation is covered by the patent’s claims, so regardless of the level or quality of the innovation, the follow-on will appear to be less innovative by virtue of falling within the patent’s claims.

Turning now to this article’s proposed fair use standard, because this article proposes applying fair use only to industries that exhibit network effects, the first factor of Professor O’Rourke’s proposal is moot. Entry into a market subject to network effects requires compatibility with the network standard, so any advancement is almost certain to be extremely incremental, and Professor O’Rourke acknowledges that this factor has its least effect in these markets.<sup>75</sup> Removal of the first O’Rourke element results in an industry-specific test that includes four-factors: (i) the purpose of the infringing use, (ii) the nature and strength of the market failure that prevents a license from being concluded, (iii) the impact of the use on the patentee’s incentives and overall social welfare, and (iv) the nature of the patented work. This industry-specific test removes the most difficult and inaccurate question in the O’Rourke test, resulting in a simplified, more workable four-factor test for courts to examine.

As Professor O’Rourke acknowledged in her original proposal, the infringing advance element has little force in network markets, where compatibility necessarily limits innovation.<sup>76</sup> The difficulties referenced above can be avoided by using this acknowledgement to limit fair use to network markets, thereby eliminating the first element of the O’Rourke test.

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67. *See id.* at 1205.

68. *See id.* at 1206 (discussing the first proposed factor).

69. *Id.*

70. *Id.*

71. *Id.* at 1207.

72. *Id.* at 1208.

73. *See* *Bleistein v. Donaldson Lithographing Co.*, 188 U.S. 239, 251 (1903) (stating that “[i]t would be a dangerous undertaking for persons trained only to the law to constitute themselves final judges of the worth of pictorial illustrations”).

74. *See* *Phillips v. AWH Corp.*, 415 F.3d 1303, 1317 (Fed. Cir. 2005) (“the prosecution history provides evidence of how the PTO and the inventor understood the patent.”).

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75. *See* O’Rourke, *supra* note 9, at 1206 (stating that the infringing advance element “has its least force in the case of network markets where compatibility with the industry standard is required for market entry.”).

76. *Id.*

#### IV. CONCLUSION

While Professor O'Rourke's general thesis is correct – patent law *does* need a fair use doctrine – her implementation leaves something to be desired. She implicitly acknowledges that software and other network markets are most in need of a fair use exception, but she applies a complicated test to all industries.<sup>77</sup> Courts are loath to engage in value judgments in copyright, and they should similarly avoid making those judgments in patent law.<sup>78</sup>

It is also clear that patent law is applied differently between industries, even when the law does not facially distinguish between them. If other areas of patent law can distinguish between industries, the fair use doctrine should distinguish between industries too. Such a distinction is important because it ensures that patent fair use will promote innovation in network markets, while avoiding further legal complications in industries already adequately served by patent law.

By first establishing that a patent is subject to network effects, and then examining the four proposed factors, much of the difficulty in Professor O'Rourke's five-part test can be avoided. The innovative quality of the advancement represented by an infringer, a particularly difficult question given the probable lack of reasonable background on the matter, is no longer an issue the courts must address under this four-factor test. However, the proposed test still examines the advance represented by the patented work, which is well documented in the patent's prosecution history.

An industry-specific patent fair use doctrine could alleviate many concerns associated with network industries. By tailoring fair use only to those network industries, the difficulties in a broadly applicable fair use doctrine can be avoided. Finally, a patent fair use doctrine can further promote the progress that the Constitution mandates.

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77. *See id.* (noting special concerns in network markets, thereby indicating that the test applies to other industries, as well).

78. *See Bleistein*, 188 U.S. at 251 (stating that “[i]t would be a dangerous undertaking for persons trained only to the law to constitute themselves final judges of the worth of pictorial illustrations”).