

## COMPULSORY PATENT LICENSING FOR EFFICIENT USE OF INVENTIONS

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*This note compares compulsory patent licensing provisions in the United States and modern, foreign nations. Many foreign nations have provisions that allow for compulsory licensing of patents. Compulsory licensing provisions give states the power to force a patent holder to license his patent to another, despite the patent holder's property interest in the patent. The author argues that the interest of the public, in some cases, may outweigh a patent holder's property interest.*

*The note begins by providing an overview of U.S. patent law and its limited use of compulsory licensing in certain cases, such as a remedy for antitrust violations. Recent U.S. cases have rekindled the need to look at expanding the use of compulsory licensing. Next, the author sets forth other nations' compulsory licensing provisions in three particular areas: dependent patents, non-worked patents, and medical and food patents. After an analysis of the limited use of compulsory licensing in the U.S., the author examines the possible expansion of the current U.S. law by analyzing current U.S. statutes and case law. The analysis also discusses proposals for the expansion of compulsory licensing and the criticism these proposals have encountered.*

*The author suggests implementing compulsory licensing into U.S. patent law by enacting legislation similar to the patent laws of other nations. If the patent holder and the individual applying to use the patent fail to reach a compromise, the author proposes that the applicant would proceed through the licensing process through a federal district court. The patent holder is able to appeal if a license is granted to the applicant, thus the holder does not completely lose property interests and rights to his creation. Expanding the use of compulsory licensing in the United States would promote the use of dormant patents, provide procedures for remedying disputes, and promote further development of technology.*

## I. INTRODUCTION

A pharmaceutical company charges high prices for a life-saving drug; the poor are unable to afford it, but there is no competition because the product is patented.<sup>1</sup> The inventor of a revolutionary new algorithm discovers that his invention may infringe a previously held patent, whose owner does not use the invention but refuses to grant a license.<sup>2</sup> A company holding a valuable patent obtains multiple patents on similar technologies to prevent other companies from entering the market.<sup>3</sup> The public interest in all these situations could be advanced by forcing the patentee to grant a license, but only at the expense of the patent holder's property rights. Should the United States institute a scheme to allow the compulsory licensing of patents?

Compulsory licensing occurs when the state requires a patent holder to license his patent to another.<sup>4</sup> Although common in other countries, including Japan, Germany, and the United Kingdom, it is rarely applied in the United States.<sup>5</sup> In other countries, compulsory licensing is typically allowed when the patent is not being worked, when a dependent patent is being blocked, or when the patent relates to food or medicine.<sup>6</sup> In the United States, however, its use is limited to a few very narrow statutory provisions and as a remedy for antitrust violations.<sup>7</sup>

Recent events suggest the need for a fresh look at compulsory licensing in the United States. The Federal Circuit's 1998 decision in *State Street Bank & Trust Co. v. Signature Financial Group, Inc.*<sup>8</sup> has caused an explosion in the number of business method and software patents granted, leading to controversies over conflicting patent claims. Also, international patent law has become increasingly harmonized, and most other countries have provisions for compulsory licensing.<sup>9</sup> Finally, the Ninth Circuit's 1997 decision in *Image Technical Services v. Eastman Ko-*

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1. See generally Evan Ackiron, *The Human Genome Initiative and the Impact of Genetic Testing and Screening Technologies: Note and Comment: Patents for Critical Pharmaceuticals: The AZT Case*, 17 AM. J.L. & MED. 145 (1991) (detailing the controversy over the high cost of the AIDS drug AZT, which many potential users were unable to afford).

2. E.g., Steven C. Carlson, *Patent Pools and the Antitrust Dilemma*, 16 YALE J. ON REG. 359, 364 (1999) (detailing the conflict over patents for public key encryption).

3. See F.M. SCHERER, *INDUSTRIAL MARKET STRUCTURE AND ECONOMIC PERFORMANCE* 451 (2d ed. 1980) (noting that Du Pont obtained hundreds of patents on nylon-related inventions to prevent other companies from developing substitutes).

4. E.g., Sara M. Ford, *Compulsory Licensing Provisions Under the TRIPs Agreement: Balancing Pills and Patents*, 15 AM. U. INT'L L. REV. 941, 945 (2000).

5. See Cole M. Fauver, *Compulsory Patent Licensing in the United States: An Idea Whose Time Has Come*, 8 NW. J. INT'L L. & BUS. 666, 668 (1988).

6. See *infra* note 124 and accompanying text.

7. See *infra* Part II.A.

8. 149 F.3d 1368 (Fed. Cir. 1998), *cert. denied*, 525 U.S. 1093 (1999).

9. See *infra* Part II.B.

*dak Co.*<sup>10</sup> has led some to suggest a greater judicial acceptance of compulsory licensing.<sup>11</sup>

This note will argue that a limited compulsory licensing provision in the United States would promote the public interest without detrimentally affecting the incentive to invent and to disclose inventions. Part II will address the state of the law regarding compulsory licensing. It will analyze the state of U.S. law, restrictions on U.S. law by international agreements, and provisions for compulsory licensing in foreign countries. The purposes of the U.S. patent system and its relation to compulsory licensing will be explored in Part III. Specifically, it will look at the issue of blocking patents, a problem that has been exacerbated by the *State Street* decision, and the effect of global patent law harmonization on the relationship between the United States and foreign countries. Finally, Part IV will propose provisions for a legislative adoption of compulsory licensing.

## II. BACKGROUND

### A. U.S. Law

The U.S. patent system has generally been hostile toward the practice of compulsory licensing. As the Supreme Court said in *Dawson Chemical Co. v. Rohm & Haas Co.*,<sup>12</sup> “[c]ompulsory licensing is a rarity in our patent system.”<sup>13</sup> In fact, the absolute right of the patent owner to prevent others from using his invention is statutorily protected: “[n]o patent owner otherwise entitled to relief for infringement or contributory infringement of a patent shall be denied relief or deemed guilty of misuse or illegal extension of the patent right by reason of his having . . . refused to license or use any rights to the patent . . .”<sup>14</sup> The legislative history of this statute indicates that it was meant to codify previous judicial decisions, and not to create new law.<sup>15</sup> Courts have used compulsory licensing to remedy antitrust violations, in order to “pry open to competition a market that has been closed by . . . illegal restraints.”<sup>16</sup> There are also statutory provisions for limited compulsory licensing under the Atomic Energy Act for inventions related to atomic energy<sup>17</sup> and under the Clean Air Act for air pollution inventions.<sup>18</sup>

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10. 125 F.3d 1195 (9th Cir. 1997).

11. See *infra* notes 83–85.

12. 448 U.S. 176 (1980).

13. *Id.* at 215.

14. 35 U.S.C. § 271(d)(4) (1994).

15. See 134 CONG. REC. H698 (1988), reprinted in 35 PAT. TRADEMARK & COPYRIGHT J. (BNA) 387 (1988) (testimony of Mr. Kastenmeier).

16. *Int'l Salt Co. v. United States*, 332 U.S. 392, 401 (1947).

17. 42 U.S.C. § 2183(g) (1994).

18. *Id.* § 7404.

### 1. *Statutory Law*

Numerous proposals have been made to amend U.S. patent law to require compulsory licensing under certain circumstances, typically to prevent the suppression or non-use of patents.<sup>19</sup> For example, the Hart Bill, proposed in 1973, would have permitted compulsory licensing of patents related to “public health, safety, or protection of the environment” and for any patent if it was not worked within three years of issuance or four years from application, or if it was blocking a subsequently issued patent.<sup>20</sup> More recently, the Affordable Prescription Drugs Act<sup>21</sup> would require compulsory licensing of patents relating to human health under certain conditions, including if “the patented material is priced higher than may be reasonably expected.”<sup>22</sup> None of these compulsory licensing proposals has ever passed, generally due to strong opposition by both industry and patent practitioners.<sup>23</sup> Arguments against these types of compulsory licensing proposals have concluded that there was no evidence of suppression,<sup>24</sup> that it would discourage invention,<sup>25</sup> that it would promote concealment,<sup>26</sup> that it “strikes at the very foundation of the patent system,”<sup>27</sup> and that “compulsory licensing is not creeping socialism; it is socialism run rampant.”<sup>28</sup> The only statutory compulsory licensing provisions in current U.S. patent law are for inventions related to atomic energy and air pollution control.

The Atomic Energy Act has provisions for the licensing of patents “[u]seful in the production or utilization of special nuclear material or atomic energy.”<sup>29</sup> As stated in the act, its purpose is “[t]o encourage widespread participation in the development and utilization of atomic energy for peaceful purposes.”<sup>30</sup> Any person may apply to the Atomic Energy Commission to obtain a license for such a patent; the applicant

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19. See STAFF OF SUBCOMM. ON PATENTS, TRADEMARK & COPYRIGHTS, SENATE COMM. ON THE JUDICIARY, 85TH CONG., *COMPULSORY LICENSING OF PATENTS—A LEGISLATIVE HISTORY* (Comm. Print 1958) [hereinafter *LEGISLATIVE HISTORY*].

20. A. Jason Mirabito, *Compulsory Patent Licensing for the United States: A Current Proposal*, 57 J. PAT. OFF. SOC'Y 404, 432 (1975) (citing S. 814, 94th Cong. § 7 (1975)).

21. H.R. 2927, 106th Cong. (1999).

22. *Id.* § 158(b)(3).

23. See *LEGISLATIVE HISTORY*, *supra* note 19, at 5 (noting opposition to compulsory licensing by the Association of Registered Patent Attorneys and the Patent Law Association of Washington).

24. *Id.* at 4 (testimony of Thomas A. Edison: “I myself do not know of a single case [of patent suppression].”).

25. *Id.* (testimony of Edwin J. Prindle: “[T]he compulsory-license clause will tend to prevent invention instead of stimulating it.”); *id.* at 10.

26. *Id.* at 10 (“The bill would encourage secrecy and the hiding of inventions.”).

27. *Id.* at 9 (providing arguments in opposition to the McFarlane bill).

28. William W. Beckett & Richard M. Merriman, *Will the Patent Provisions of the Atomic Energy Act of 1954 Promote Progress or Stifle Invention?*, 37 J. PAT. OFF. SOC'Y 38, 59 (1955) (citing H.R. REP. NO. 83-2181, at 99 (1954)).

29. 42 U.S.C. § 2183(c) (1994). The compulsory licensing provisions generated considerable opposition in Congress. See Beckett & Merriman, *supra* note 28, at 43-45 (detailing attempts by the House to eliminate the compulsory licensing provision).

30. 42 U.S.C. § 2013(d).

must specify the proposed use of the patented invention, the steps taken to obtain a license from the patentee, and the effects of both granting the license and the failure to obtain such a license.<sup>31</sup> The Commission would then hold hearings to determine whether the license should be granted.<sup>32</sup> If the license is granted, the patentee is entitled to a reasonable royalty; the royalty may be determined either by agreement between the patentee and the licensee, or by the Commission.<sup>33</sup>

The Clean Air Act has a provision for compulsory licensing of patents related to the control of air pollution.<sup>34</sup> The purpose of this provision is to allow industries greater access to air pollution control devices, and to prevent companies from avoiding the use of superior inventions by claiming that they are not available.<sup>35</sup> The statute provides for licenses if the invention covered by the patent is needed to comply with emission requirements, there is no reasonable alternative available to meet the requirements, and the unavailability of the use of the invention would result in a "lessening of competition or [the] tendency to create a monopoly."<sup>36</sup> The Attorney General would certify these facts to a federal district court, which may issue an order requiring the patentee to issue a license "[o]n such reasonable terms and conditions as the court, after hearing, may determine."<sup>37</sup> Although there does not appear to have been any attempts to obtain a compulsory license under this provision, it is possible that it has persuaded parties to come to their own licensing agreements.<sup>38</sup>

The existence of compulsory licensing provisions in the Atomic Energy Act and the Clean Air Act show that legislators are willing to consider compulsory licensing provisions if narrowly tailored to specific provisions promoting the public good.

## 2. *Judicial Decisions*

### a. Non-use, Suppression, and the Public Interest

Judicial decisions have generally upheld the absolute right of the patent holder to exclude others from using his invention, but there has always been tension between this right and the public good. In the early case of *Continental Paper Bag Co. v. Eastern Paper Bag Co.*,<sup>39</sup> the pat-

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31. *Id.* § 2183(b)-(c).

32. *Id.* § 2183(d)-(e).

33. *Id.* § 2183(g).

34. *Id.* § 7608.

35. See Paul Gormley, Comment, *Compulsory Patent Licenses and Environmental Protection*, 7 TUL. ENVTL. L.J. 131, 141-42 (1993).

36. See 42 U.S.C. § 7608(B)(2).

37. *Id.*

38. See Kenneth J. Nunnenkamp, *Compulsory Licensing of Critical Patents Under CERCLA?*, 9 J. NAT. RESOURCES & ENVTL. L. 397, 406 n.40 (1993-94).

39. 210 U.S. 405 (1908).

entee sued to enjoin the defendant from infringing its patent for machinery used in the production of paper bags.<sup>40</sup> The patentee was not using the invention disclosed in the patent, and sought to prevent competitors from using it.<sup>41</sup> The defendant argued that a court of equity should not allow a patent owner who is suppressing a patent to obtain an injunction to prevent others from using the invention, as this would “defeat the very object of the patent laws.”<sup>42</sup> The Supreme Court cited numerous previous cases where a patentee had a cause of action against an infringer, even though the patentee did not use the patented invention himself.<sup>43</sup> The Court noted that “it is the privilege of any owner of property to use or not use it, without question of motive,” and that, although in other countries non-use affects the patent right, Congress had declined to implement such a policy.<sup>44</sup> Thus, the Court held the non-use, and indeed the suppression, of the patent by the patent owner was not grounds for prohibiting the owner from restricting the use of her patent.<sup>45</sup>

However, in *Special Equipment Co. v. Coe*,<sup>46</sup> Justice Douglas, dissenting along with two other members of the Court, argued for the abolition of the *Continental Paper Bag* doctrine as inconsistent with the Constitution.<sup>47</sup> Pointing out that the right to a patent is a privilege conditioned on the public purpose “[t]o promote the Progress of Science and useful Arts,”<sup>48</sup> Justice Douglas argued that the patent right was not absolute but was rather a means to an end.<sup>49</sup> In Douglas’s view, the *Continental Paper Bag* doctrine “subordinated the public purpose of the grant to the self-interest of the patentee.”<sup>50</sup> Justice Douglas noted that the increasing practice of patent suppression “preclude[d] experimentation” and “blocked off” whole technologies, causing a barrier to the whole economy.<sup>51</sup>

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40. *Id.* at 406.

41. *See id.* at 406–07.

42. *Id.*

43. *Id.* at 426.

44. *Id.* at 429.

45. *Id.*

46. 324 U.S. 370 (1945).

47. *Id.* at 380–81 (Douglas, J., dissenting).

48. U.S. CONST. art. I, § 8, cl. 8.

49. 324 U.S. at 381–82 (Douglas, J., dissenting).

50. *Id.* at 382 (Douglas, J., dissenting).

51. *Id.* at 382–83 (Douglas, J., dissenting).

The result is that suppression of patents has become commonplace. Patents are multiplied to protect an economic barony or empire, not to put new discoveries to use for the common good. “It is common practice to make an invention and to secure a patent to block off a competitor’s progress. By studying his ware and developing an improvement upon it, a concern may ‘fence in’ its rival; by a series of such moves, it may pin the trade enemy within a technology which rapidly becomes obsolete. As often as not such maneuvers retard, rather than promote, the progress of the useful arts. Invariably their effect is to enlarge and to prolong personal privilege within the public domain.” One patent is used merely to protect another. The use of a new patent is suppressed so as to preclude experimentation which might result in further invention by competitors. A whole technology is blocked off. The result is a clog to our economic machine and a barrier to an economy of abundance.

*Id.* (citations omitted).

Some courts have suggested that public policy could force a patentee to license its patent. In *Vitamin Technologists, Inc. v. Wisconsin Alumni Research Foundation*,<sup>52</sup> the plaintiffs held patents for a process of producing vitamin D in food by exposure to ultraviolet radiation.<sup>53</sup> The plaintiffs refused to license the process for production of vitamin D in oleomargarine, “one of the foods of the poor,” and sued the defendants for infringement.<sup>54</sup> The Ninth Circuit ultimately held that the patents were invalid due to anticipation,<sup>55</sup> but also suggested that relief could be denied to the patent owner if the refusal to license the patent was against public interest.<sup>56</sup> The court noted that the suppression of a patent that was essential to public health was arguably “vastly more against the public interest” than antitrust or price tying arrangements.<sup>57</sup>

On only a few occasions, and none recently, has a court ordered the compulsory licensing of a patent where the patentee was not using the patent.<sup>58</sup> In *Foster v. American Machine & Foundry Co.*,<sup>59</sup> a patent holder who was not using the patent sued for infringement.<sup>60</sup> The Second Circuit upheld the decision of the district court, which awarded damages but denied injunctive relief, and instead ordered a compulsory license at a royalty rate determined by the court.<sup>61</sup> Because the patentee had no plans to use the patent, the court reasoned that it would be inequitable to impose hardship on the infringer without any corresponding benefit to the patentee.<sup>62</sup> However, later decisions by the Federal Circuit have upheld the near-absolute right of the patentee to obtain an injunction.<sup>63</sup> The Federal Circuit has held that “[t]he very nature of the patent right is the right to exclude others. Once the patentee’s patents have been held to be valid and infringed, he should be entitled to the full enjoyment and protection of his patent rights.”<sup>64</sup> Thus, it is unlikely now that a court would deny an injunction to prevent an infringer from continuing his activities, even if the patent holder had no intention of using the invention.

The courts have upheld the right of the patentee to prohibit others from using his invention, even if the patentee himself was not using it.

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52. 146 F.2d 941 (9th Cir. 1945).

53. *Id.* at 942.

54. *Id.* at 943.

55. *Id.* at 948–49.

56. *Id.* at 944.

57. *Id.* at 946.

58. See Gerald Sobel, *The Court of Appeals for the Federal Circuit: A Fifth Anniversary Look at Its Impact on Patent Law and Litigation*, 37 AM. U. L. REV. 1087, 1120–21 (1988).

59. 492 F.2d 1317 (2d Cir. 1974).

60. *Id.* at 1319.

61. *Id.* at 1324.

62. *Id.*

63. *E.g.*, Sobel, *supra* note 58, at 1122 (explaining that in *Polaroid Corp. v. Eastman Kodak Co.*, 641 F. Supp. 828 (D. Mass. 1985), *aff'd*, 789 F.2d 1556 (Fed. Cir. 1986), the court awarded a permanent injunction even though it was argued that it would cause the loss of a \$200 million investment in plant and equipment and 800 full-time and 3700 part-time employees.).

64. *Smith Int'l, Inc. v. Hughes Tool Co.*, 718 F.2d 1573, 1581 (Fed. Cir. 1983).

Although courts have suggested that the public interest could provide a basis for forcing the patentee to license, they have declined to do so, outside of remedying antitrust violations.

b. Antitrust Violations

The patent and antitrust laws have always been in some conflict, although they both have the same goal: to benefit the public.<sup>65</sup> The patent laws encourage innovation and invention, while antitrust laws promote competition; the two laws are complementary and both promote the public interest.<sup>66</sup> Patents grant a type of limited monopoly power, while antitrust laws attempt to prevent monopolies.<sup>67</sup> Sometimes the courts have had difficulty reconciling these two laws, but two principles have emerged: first, patent owners may refuse to sell or license their protected invention, and second, patentees are not immune from antitrust liability.<sup>68</sup> Thus, the antitrust laws do not negate the patentee's right to exclude others from using the invention protected by the patent.<sup>69</sup>

In *United States v. Glaxo Group Ltd.*,<sup>70</sup> the Supreme Court noted that compulsory licensing at reasonable royalty rates is a recognized antitrust remedy.<sup>71</sup> In *Glaxo*, the government sued a group of drug companies who had entered into a patent pooling arrangement, which the government alleged violated the antitrust act.<sup>72</sup> The patents were intrinsically related to, and contributed to perpetuating, the conduct that caused the restraint of trade.<sup>73</sup> Only by forcing the companies to grant licenses to other manufacturers would it be possible to "pry open to competition" the particular drug market that had been "closed by defendants' illegal restraints."<sup>74</sup> Thus, the Court granted the government's request that the companies be required to offer reasonable licensing of the patents.<sup>75</sup>

In *Image Technical Services, Inc. v. Eastman Kodak Co.*,<sup>76</sup> the Ninth Circuit reported that it had found "no reported case in which a court has imposed antitrust liability for a unilateral refusal to sell or license a patent or copyright."<sup>77</sup> In *Image Technical Services*, independent service organizations (ISOs) sued Kodak for violations of the Sherman Antitrust

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65. Tonya Trumm, Comment, *Expansion of the Compulsory Licensing Doctrine?* *Image Technical Services, Inc. v. Eastman Kodak Co.*, 24 IOWA J. CORP. L. 157, 159 (1998).

66. *Intergraph Corp. v. Intel Corp.*, 195 F.3d 1346, 1362 (Fed. Cir. 1999).

67. *Image Technical Servs., Inc. v. Eastman Kodak Co.*, 125 F.3d 1195, 1215 (9th Cir. 1997).

68. *Id.* at 1215.

69. *See Intergraph Corp. v. Intel Corp.*, 195 F.3d 1346, 1362 (Fed. Cir. 1999).

70. 410 U.S. 52 (1973).

71. *Id.* at 64.

72. *Id.* at 54-55.

73. *Id.* at 62.

74. *Id.* (quoting *Int'l Salt Co. v. United States*, 332 U.S. 392, 401 (1947)).

75. *Id.* at 64.

76. 125 F.3d 1195 (9th Cir. 1997).

77. *Id.* at 1216.

Act.<sup>78</sup> The ISOs alleged that Kodak monopolized the equipment service market for photocopy machines.<sup>79</sup> Although “[t]he right to license [a] patent, exclusively or otherwise, or to refuse to license at all, is the ‘untrammelled right’ of the patentee,”<sup>80</sup> the court pointed out that the right of exclusion is not unlimited; there is no protection for a patent that was unlawfully acquired or for attempts to extend a monopoly beyond the grant of the patent.<sup>81</sup> The court upheld the lower court’s decision enjoining Kodak to license patented parts for ten years.<sup>82</sup> The *Image Technical Services* decision has been criticized as the first time that a court forced a patentee to license a valid patent.<sup>83</sup> Some scholars have argued that the decision ignores the possible detrimental effects of expanding the compulsory licensing system,<sup>84</sup> but the court decision seems to be based on “Kodak’s failure to strenuously assert its patent rights as a defense from the beginning,” rather than any intent by the court to expand compulsory licensing.<sup>85</sup>

A case with similar facts but the opposite result is *In re Independent Service Organizations Antitrust Litigation*,<sup>86</sup> where Xerox refused to sell photocopier parts to ISOs.<sup>87</sup> The ISOs sued Xerox for violating the Sherman Antitrust Act.<sup>88</sup> In affirming the district court’s grant of summary judgment for Xerox, the court held that antitrust laws do not prevent a patentee from excluding others from using its patent, even though there may be an anticompetitive effect, unless the infringer proves one of two conditions: that the patent was obtained fraudulently or the litigation was a mere sham.<sup>89</sup> The court distinguished *Image Technical Services* in that there was no evidence of illegal tying of patented parts to unpatented products in this case.<sup>90</sup> Therefore, because Xerox did not use its “statutory right to refuse to sell patented parts to gain a monopoly in a market *beyond the scope of the patent*,”<sup>91</sup> but rather refused to sell in markets *within* the scope of its patent, Xerox “was under no obligation to sell or license its patented parts and did not violate the antitrust laws by refusing to do so.”<sup>92</sup>

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78. *Id.* at 1200.

79. *Id.* at 1201.

80. *Id.* at 1215 (quoting *United States v. Westinghouse Elec. Corp.*, 648 F.3d 642, 647 (9th Cir. 1981)).

81. *Id.* at 1216.

82. *Id.* at 1225.

83. See Trumm, *supra* note 65, at 158; see also Michael H. Kauffman, Note, *Image Technical Services, Inc. v. Eastman Kodak Co.: Taking One Step Forward and Two Steps Back in Reconciling Intellectual Property Rights and Antitrust Liability*, 34 WAKE FOREST L. REV. 471, 529 (1999).

84. See Trumm, *supra* note 65, at 166.

85. Kauffman, *supra* note 83, at 528.

86. 203 F.3d 1322 (Fed. Cir. 2000).

87. *Id.* at 1324.

88. *Id.*

89. See *id.* at 1326.

90. See *id.* at 1327.

91. *Id.*

92. *Id.* at 1328.

These cases show that compulsory licensing currently plays a very limited role in the U.S. patent system. Even though courts have suggested that they might use compulsory licensing to prevent a use of the patent right that was against public policy, in recent practice it has only been used as a remedy for antitrust violations. When a patentee refuses to license, the courts have only resorted to compulsory licensing when the patent was obtained fraudulently, the litigation was a sham, or there was an illegal tying arrangement.<sup>93</sup> The harsh criticism of the *Image Technical Services* decision—such as that it “has created instability for patent holders in the Ninth Circuit”<sup>94</sup>—illustrates the general hostility towards any compulsory licensing provision for a valid patent.

### B. *International Law*

#### 1. *Overview of International Patent Law*

The United States is a party to several international agreements for the protection of intellectual property that have provisions regulating compulsory licensing. The earliest of these agreements is the Paris Convention for the Protection of Industrial Property (Paris Convention), which was entered into in 1883.<sup>95</sup> The purpose of the Paris Convention was to establish a system for inventors to protect their inventions internationally.<sup>96</sup> Prior to the Paris Convention, an inventor was required to submit a separate patent application in each country where protection was desired, and had to comply with the different procedural and substantive filing requirements of each country.<sup>97</sup> To remedy this, the Paris Convention contains several provisions to promote uniformity in world patent law, including national treatment and right of priority.<sup>98</sup> Nationals of member countries have the same rights with regard to intellectual property in the other countries of the Paris Convention as the other country's own nationals.<sup>99</sup> The Paris Convention had 162 member nations as of July 15, 2001 and is administered by the World Intellectual Property Organization (WIPO).<sup>100</sup> The WIPO's goal is to harmonize national intellectual property legislation and procedures, and since the Paris Convention, there has been a steady move toward harmonization

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93. *See id.* at 1327.

94. Trumm, *supra* note 65, at 158.

95. Paris Convention for the Protection of Industrial Property, Sept. 5, 1970, 21 U.S.T. 1583, 828 U.N.T.S. 305 [hereinafter Paris Convention].

96. *See id.*

97. *See* Gerald J. Mossinghoff & Vivian S. Kuo, *World Patent System Circa 20XX, A.D.*, 38 IDEA 529, 532 (1998).

98. *See id.*

99. Paris Convention, *supra* note 95, art. 2(1), 21 U.S.T. at 1583, 828 U.N.T.S. at 305.

100. *See* World Intellectual Property Organization Website, *Paris Convention for the Protection of Industrial Property*, available at <http://www.wipo.org/treaties/docs/english/d-paris.doc> (last visited Sept. 5, 2000).

of world patent law.<sup>101</sup> The WIPO “administers 21 international treaties dealing with different aspects of intellectual property protection.”<sup>102</sup>

Besides the Paris Convention, the WIPO also administers the Patent Cooperation Treaty (PCT), which was entered into in 1978. The PCT allows an inventor to file an “international application” in one of several national patent offices and delay filing in individual countries, while retaining the priority date of his first patent application.<sup>103</sup> This reduces the expense of obtaining patent protection in multiple regions.<sup>104</sup> The PCT has resulted in the harmonization of the patent application process in the member countries.<sup>105</sup>

The Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPs) was formed during the Uruguay Round of the General Agreement on Tariffs and Trade in 1993.<sup>106</sup> The TRIPs agreement led to the adoption of a twenty-year patent term in the United States to achieve uniformity in patent terms throughout the world.<sup>107</sup> The United States has also adopted the American Inventors Protections Act of 1999,<sup>108</sup> which requires publication of patent applications after eighteen months.<sup>109</sup> These changes have brought U.S. patent law in line with international standards. However, the United States is the only major country using a first-to-invent rather than a first-to-file system, which has presented a major obstacle in the road to patent harmonization.<sup>110</sup> Recently, the WIPO proposed a new treaty, the Patent Law Treaty (PLT) which is expected to take effect within the next three years after it is ratified by WIPO member countries.<sup>111</sup> The PLT will standardize and simplify application procedures and allow for electronic filing, which should eventually reduce the price of obtaining a patent.<sup>112</sup> The ultimate goal is “a broad administrative system allowing for a single patent application

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101. See Kevin Cuenot, *Perilous Potholes in the Path Toward Patent Law Harmonization*, 11 J. L. & PUB. POL'Y 101, 105 (1999).

102. World Intellectual Property Organization Website, *About WIPO*, at <http://www.wipo.org/about-wipo/en> (last visited Sept. 5, 2000).

103. Cuenot, *supra* note 101, at 106.

104. *Id.*

105. *See id.*

106. Agreement on Trade-Related Aspects of Intellectual Property Rights, Dec. 15, 1993, 33 I.L.M. 81 [hereinafter TRIPs].

107. *See id.* art. 33; 35 U.S.C. § 154(a)(2) (1994).

108. Pub. L. No. 106-113, 113 Stat. 1501A-552 (1999).

109. *See* 35 U.S.C. § 122(b)(1)(A) (Supp. V. 1994).

Subject to paragraph (2), each application for a patent shall be published, in accordance with procedures determined by the Director, promptly after the expiration of a period of 18 months from the earliest filing date for which a benefit is sought under this title. At the request of the applicant, an application may be published earlier than the end of such 18-month period.

*Id.*

110. Cuenot, *supra* note 101, at 102-03.

111. *See* Daniel Pruzin, *WIPO Members Adopt Patent Law Treaty; Work to Begin on Harmonizing Standards*, BNA PATENT, TRADEMARK & COPYRIGHT DAILY, June 2, 2000, at D2.

112. *See id.*

covering the entire world,” which is expected to be achieved within five to fifteen years.<sup>113</sup>

## 2. *International Regulation of Compulsory Licensing*

Compulsory licensing of patents is provided for under Article 5 of the Paris Convention in order to prevent patent abuse.<sup>114</sup> These provisions for compulsory licensing are among the most controversial provisions of the Paris Convention.<sup>115</sup> Article 5, section A(2) provides that “[e]ach country of the Union shall have the right to take legislative measures providing for the grant of compulsory licenses to prevent the abuses which might result from the exercise of the exclusive rights conferred by the patent, for example, failure to work.”<sup>116</sup> Section 4 provides that the compulsory license may not be applied until after “the expiration of a period of four years from the date of filing of the patent application or three years from the date of the grant of the patent, whichever period expires last.”<sup>117</sup> The patentee can avoid the compulsory license if he “justifies his inaction by legitimate reasons.”<sup>118</sup> The license is nonexclusive and nontransferable.<sup>119</sup>

The TRIPs agreement places further limitations on the granting of compulsory licenses, providing that “[m]embers may provide limited exceptions to the exclusive rights conferred by a patent, provided that such exceptions do not unreasonably conflict with a normal exploitation of the patent and do not unreasonably prejudice the legitimate interests of the patent owner, taking account of the legitimate interests of third parties.”<sup>120</sup> Compulsory licenses are regulated under Article 31, which has the following requirements: (1) authorization must be considered on the individual merits; (2) the applicant has attempted to obtain a license from the patent holder; (3) the use is nonexclusive and nonassignable; (4) the use is primarily for the domestic market; and (5) the patent holder receives adequate remuneration.<sup>121</sup> TRIPs allows the government to impose compulsory licenses as a remedy for “anti-competitive prac-

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113. *Id.* (quoting Albert Tramposch, director of WIPO's Industrial Property Law Division).

114. Paris Convention, *supra* note 95, art. 5, 21 U.S.T. at 1636-37, 828 U.N.T.S. at 321.

115. See EDITH PENROSE, *THE ECONOMICS OF THE INTERNATIONAL PATENT SYSTEM* 78 (1951).

116. Paris Convention, *supra* note 95, art. 5A(2), 21 U.S.T. at 1636, 828 U.N.T.S. at 321.

117. *Id.* art. 5A(2).

118. *Id.*

119. Section 4 provides:

A compulsory license may not be applied for on the ground of failure to work or insufficient working before the expiration of a period of four years from the date of filing of the patent application or three years from the date of the grant of the patent, whichever period expires last; it shall be refused if the patentee justifies his inaction by legitimate reasons. Such a compulsory license shall be non-exclusive and shall not be transferable, even in the form of the grant of a sub-license, except with that part of the enterprise or good-will which exploits such license.

*Id.* art. 5A(4).

120. TRIPs, *supra* note 106, art. 30, 33 I.L.M. 95.

121. *Id.* art. 31.

tices.”<sup>122</sup> There is also a provision allowing licensing in the case of dependent patents, which is discussed below.<sup>123</sup>

### C. Foreign Law

Under certain circumstances in most countries, the government has the power to revoke or limit a previously granted exclusive patent right. In many countries this power includes the ability to grant a compulsory license. Although the specific terms vary from country to country, there are three basic situations: (1) where a dependent patent is being blocked, (2) the patent is not being worked, or (3) the invention relates to food or medicine.<sup>124</sup> These categories result from the limitations imposed on member countries by the Paris Convention and by the TRIPs agreement.<sup>125</sup>

#### 1. Dependent Patents

A dependent patent is one that cannot be used without infringing an earlier, existing patent.<sup>126</sup> This can result in an undesirable situation where neither party can efficiently use the invention: the second party's invention would infringe the first party's patent, while the first party cannot use the improved invention of the second inventor. If the parties are unable to come to a licensing agreement, the improved invention would not be used. The loss to the public would depend on how much the second invention improves upon the first invention.<sup>127</sup> If only the improved invention is commercially feasible, the public would be deprived of the invention. By having a compulsory licensing provision, the parties can be forced to either agree to royalty terms or cross-license each other's patents so that the invention may be worked.

The TRIPs agreement allows member countries to provide for the granting of a compulsory license to the owner of a dependent patent (“the second patent”) which cannot be used without infringing another patent (“the first patent”), under the following conditions:

- (i) the invention claimed in the second patent shall involve an important technical advance of considerable economic significance in relation to the invention claimed in the first patent;
- (ii) the owner of the first patent shall be entitled to a cross license on reasonable terms to use the invention claimed in the second patent; and

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122. *Id.* art. 31(k).

123. *See infra* Part II.C.1.

124. *See* Gianna Julian-Arnold, *International Compulsory Licensing: The Rationales and the Reality*, 33 *IDEA* 349, 349-50 (1993).

125. *See supra* Part II.B.2.

126. Julian-Arnold, *supra* note 124, at 350.

127. *See id.*

(iii) the use authorized in respect of the first patent shall be non-assignable except with the assignment of the second patent.<sup>128</sup>

Thus, if the second invention is a significant advancement over the first invention, the second patentee can force the original patentee to come to an agreement so that the public will have the benefit of the improved, second invention.

## 2. *Non-working of Patent*

The second common provision for the granting of a compulsory license is where the patent is not being “worked.” Because the patent grant assumes that the invention will be used to benefit the public, the non-use of the invention by the patent holder may be seen as a breach of this agreement, resulting in the loss of the exclusive right to the invention.<sup>129</sup> The Paris Convention has specific provisions allowing compulsory licensing when the patent is not being worked.<sup>130</sup> Provisions requiring working in the country have attempted to encourage use of the invention within the particular country and to prevent the unreasonable denial of new inventions to the public.<sup>131</sup>

The definition of “worked” varies by country. Although “worked” may mean that the product must actually be produced in the country, in most countries it merely means that the product must be available in the country, either produced within or imported from without.<sup>132</sup> The availability requirement is justifiable; if the invention is not available in a country, other producers should be allowed to obtain a license so that the item is available to the public. However, if importation of the patented product does not qualify as “working,” then a country could freely grant licenses for any product that is not actually made in that country.<sup>133</sup> This is hard to justify on any grounds other than to protect local industries; companies should be allowed to produce the products where it is cheapest for them to do so, since the public will ultimately benefit from a cheaper product.<sup>134</sup> Even in countries which define working to include importation, administrative agencies may not properly enforce the law, which may force the patentee to do some final processing of the product within that country to avoid the specter of compulsory licensing.<sup>135</sup>

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128. TRIPS, *supra* note 106, art. 31(l), 33 I.L.M. 81.

129. Julian-Arnold, *supra* note 124, at 351.

130. Paris Convention, *supra* note 95, art. 5, 21 U.S.T. at 1636, 828 U.N.T.S. at 321.

131. See Julian-Arnold, *supra* note 124, at 352.

132. See Fauver, *supra* note 5, at 672.

133. This reflects the roots of many countries' patent systems, where patents were granted to nonnationals mainly to encourage the actual use of the invention within the country; the administration of the patent system was subject to the goal of effectively developing national industries. See PENROSE, *supra* note 115, at 88–89.

134. See Fauver, *supra* note 5, at 673–74.

135. See Arthur Wineburg, *U.S. Trade Threats Spur Asian Laws on Intellectual Property*, NAT'L L.J., July 13, 1992, at 35 (describing how in Korea, even though the patent statute defines working to

### 3. *Food and Medicine Patents*

The third major provision for the granting of a compulsory license is for inventions relating to food or medicine. There are several rationales for countries to permit compulsory licensing for these inventions: to protect national security by ensuring an adequate supply of medicine, especially to combat devastating diseases like AIDS; to avoid the high costs of new drugs which developing countries cannot afford; and to encourage the retention of scientists and the development of a local pharmaceutical industry.<sup>136</sup> There is inherent tension between the needs of developed and developing countries. The pharmaceutical industry of developed countries does not want to allow drugs, which cost millions or billions to research and develop, to be used in other countries without consent.<sup>137</sup> Because they are generally users but not producers, developing countries are reluctant to grant patent rights to pharmaceutical products. Allowing patent protection for such products can cause prices to triple, decreasing their availability.<sup>138</sup>

The different views on compulsory licensing can cause conflict between developed and developing countries. For example, South Africa recently introduced legislation to allow the issuance of compulsory licenses to reduce the cost of AIDS drugs to protect the health of the public.<sup>139</sup> The United States saw that action as a violation of patent protection under the TRIPs agreement.<sup>140</sup> Eventually, the United States agreed to allow the licensing, but it is not clear if the change in the United States' position was an acknowledgement of the legality of compulsory licensing of pharmaceuticals or merely a concession to political pressure.<sup>141</sup>

### 4. *Specific Provisions Under Foreign Law*

The pervasiveness of compulsory licensing in foreign countries is illustrated by a brief survey of the patent provisions of the major industrial nations. In the United Kingdom, for example, compulsory licensing may be ordered three years after the grant if the demand for the patented product in the U.K. "[i]s not being met on reasonable terms," or if the refusal to grant a license prejudices "[t]he establishment or development of commercial or industrial activities."<sup>142</sup> There is also a provision for

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include importation, "Korean lawyers regularly advise their clients not to rely solely on importation to satisfy the statutory working requirement.")

136. See Julian-Arnold, *supra* note 124, at 353-54.

137. See Ford, *supra* note 4, at 946.

138. See Wineburg, *supra* note 135, at 29.

139. See Ford, *supra* note 4, at 950; see also Kate A. Murashige, *AIDS Drugs Raise Issue of Recoupment for R&D*, NAT'L L.J., Mar. 27, 2000, at C10.

140. See Ford, *supra* note 4, at 950.

141. See *id.* at 956.

142. Patents Act of 1977, §§ 48, 48A(1)(b), (c) (1999) (Eng.).

dependent patents: if a patented invention represents “[a]n important technical advance of considerable economic significance,” but its use is hindered by a previous patent, the owner of the dependent patent may obtain a compulsory license, and the original patentee may obtain a cross license.<sup>143</sup> In Japan, compulsory licensing may be ordered if the patent is not worked in Japan for three consecutive years.<sup>144</sup> Japanese law also permits compulsory licensing “where working is in the public interest.”<sup>145</sup> In Canada, a compulsory license may be granted if three years after the grant, “the demand for the patented article in Canada is not being met to an adequate extent and on reasonable terms.”<sup>146</sup> Canada previously allowed compulsory licenses for both non-use and pharmaceutical patents, but these provisions were abolished in 1993.<sup>147</sup> Germany allows compulsory licenses if the patent is not worked within three years of the grant,<sup>148</sup> or if the patentee refuses to license and permission to use the patent is “indispensable in the public interest.”<sup>149</sup> Thus, in these major industrial nations, compulsory licenses may be granted in limited situations.

### III. ANALYSIS

#### A. *Compulsory Licensing and the U.S. Patent System*

The U.S. patent system is authorized by Article I, Section 8, Clause 8 of the U.S. Constitution, which gives Congress the power “[t]o promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries.”<sup>150</sup> The patent grant gives the patentee the right to exclude others from using his invention.<sup>151</sup> The main rationales for the patent system are to promote the development and exploitation of inventions, and to encourage inventors to disclose their inventions to the public.<sup>152</sup> By ensuring that his invention may not be freely copied by others, the patentee can develop the invention into a product with some degree of certainty that he will be able to profit from his investment.<sup>153</sup> The

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143. *Id.* § 48A(1)(b)(i), (4).

144. *See* 2F JOHN P. SINNOTT, *WORLD PATENT LAW AND PRACTICE*, Japanese Patent Law of 1959 (as amended through May 6, 1998), Patent Law art. 83(1) (2001).

145. *Id.* art. 93(1).

146. Patent Act, R.S.C. ch. P-4, S. 65 (1985), available at <http://laws.justice.gc.ca/en/p-4/78427.html> (updated Dec. 23, 2000).

147. *See* J.W. BAXTER, *WORLD PATENT LAW AND PRACTICE* § 9.02 (2001); Edward Hore, *A Comparison of United States and Canadian Laws as They Affect Generic Pharmaceutical Market Entry*, 55 *FOOD & DRUG L.J.*, 373, 383 (2000).

148. *See* 2 J.W. BAXTER, *WORLD PATENT LAW AND PRACTICE* § 8.02 (2001).

149. 2D JOHN P. SINNOTT, *WORLD PATENT LAW AND PRACTICE*, Federal Republic of Germany (West Germany) German Patent Law art. 15 (2001).

150. U.S. CONST. art. I, § 8, cl. 8.

151. 35 U.S.C. § 271 (1994).

152. *See* PENROSE, *supra* note 115, at 31; F.M. SCHERER, *INDUSTRIAL MARKET STRUCTURE AND ECONOMIC PERFORMANCE* 440 (2d ed. 1980).

153. *See* PENROSE, *supra* note 115, at 34.

public benefits by both the disclosure of the invention, which advances the public knowledge, and by the availability of a new product. If no patent protection was available, the inventor would have a large incentive to keep his invention secret, so that no competitor would be able to copy it.<sup>154</sup>

Although it encourages inventions and innovations that might not otherwise be made, the patent system generates social costs, the most obvious of which is the increased cost due to monopolistic pricing of products that would have been available without patent protection.<sup>155</sup> Also, enabling firms to have exclusive use of a given invention may discourage routine advances in production that would not be patentable and favor excessive investment in innovation and research.<sup>156</sup> Multiple companies may waste resources in attempting to duplicate a certain invention; however, the public may also benefit from multiple options and variations of a certain technology.<sup>157</sup> Although the patent system does have some inefficiencies, very few would argue for its outright abolition; the key is to strike a balance by giving enough protection to encourage innovation, but not so much protection that it imposes excessive social burdens.<sup>158</sup>

There are a number of factors that must be addressed in determining the scope of the patent grant in order to maximize the incentive effect.<sup>159</sup> These factors include the length of the patent grant, what subject matter is patentable, whether to have limitations such as the doctrine of equivalents and disclosure of the 'best mode,' and the application procedure.<sup>160</sup> Allowing compulsory licensing is merely another variable that can be adjusted in order to obtain the most efficient patent grant, that is, the one that maximizes the incentive of inventors to develop new inventions. Because the current U.S. patent system is presumed to be relatively efficient in its goal of encouraging innovation, any proposed changes must consider the effect on the incentive to innovate as well as the effect on society.

Compulsory licensing has been opposed on the grounds that it would diminish the purpose of the patent system by reducing inventors' incentive to develop new technologies and encouraging inventors to keep inventions secret.<sup>161</sup> The possibility of a compulsory license would reduce

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154. See SCHERER, *supra* note 152, at 441.

155. See *id.*

156. See C.T. TAYLOR & Z.A. SILBERSTON, THE ECONOMIC IMPACT OF THE PATENT SYSTEM 29 (Univ. of Cambridge Dep't of Applied Econ., Monograph No. 23, 1973).

157. See *id.*

158. See F.M. SCHERER, THE ECONOMIC EFFECTS OF COMPULSORY PATENT LICENSING 84 (Ctr. for the Study of Fin. Inst. N.Y. Univ., Monograph No. 1977-2, 1977).

159. See SCHERER, *supra* note 152, at 442; Robert P. Merges & Richard R. Nelson, *On the Complex Economics of Patent Scope*, 90 COLUM. L. REV. 839, 839 (1990).

160. See generally Merges & Nelson, *supra* note 159, at 839.

161. See Leroy Whitaker, *Compulsory Licensing—Another Nail in the Coffin*, 2 AM. PAT. L. ASS'N Q.J. 155, 161 (1974).

the value of the patent; therefore, inventors would be less likely to invest money to develop a new invention because the return on investment would be smaller.<sup>162</sup> Inventors would be more likely to keep the invention secret, if feasible, rather than patent it, to avoid the possibility of a license being granted. These two results would defeat the main purposes of the patent system: to promote innovation and to encourage disclosure of inventions.

These arguments, however, overestimate the effects of a compulsory licensing system and would only occur in a system that grants licenses very liberally. Virtually all systems give patentees a minimum three- to five-year time period in which to exploit their invention before compulsory licensing may be granted. This allows the inventor sufficient time to determine whether the invention is worth pursuing. Even after this time period, compulsory licenses generally would only be granted if the invention was not being used domestically, or if it was blocking a dependent patent. Thus, inventors would be secure in the knowledge that they would still have patent protection for any invention that they planned to use, or that they would be able to obtain a cross license for a blocking patent. Even if a compulsory license were allowed to be granted for one of the other reasons (such as a medicine patent), the patentee would still have the advantage of a head start over his competitors in bringing the product to market, and would still be entitled to reasonable royalties from the licensee.<sup>163</sup> Therefore, it seems likely that compulsory licensing would not significantly discourage investment in innovation or encourage keeping inventions secret.<sup>164</sup>

A related argument against compulsory licensing is that it reduces product competition.<sup>165</sup> The competition between companies trying to develop the best product in order to control the market is what leads to the development of new products, to the benefit of the public.<sup>166</sup> If a competitor could merely force a license for the patented invention, the incentive to develop new inventions is diminished.<sup>167</sup> Also, if compulsory licensing is available, a competitor who thinks that his product may be infringing may opt for the license rather than risk being sued for infringement or trying to invalidate the patent. This could create the perception that a patent is valid when it really is not, because no one is willing to challenge it. However, this would only be a concern if compulsory licenses were granted very liberally; under a normal compulsory licensing scheme, licenses would be granted so infrequently that a party would

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162. See Fauver, *supra* note 5, at 676.

163. See *id.* at 676–77.

164. See SCHERER, *supra* note 152, at 457 (“[T]he substantial amount of evidence now available suggests that compulsory patent licensing . . . would have little or no adverse impact on the rate of technological progress and would on occasion mitigate significant monopoly burdens.”).

165. See Whitaker, *supra* note 161, at 165.

166. See *id.*

167. See *id.*

generally be better off trying to develop a better product than relying on obtaining a compulsory license.

The conclusion that compulsory licensing would not significantly impair the purpose of the patent system is supported by two studies of companies' attitudes toward compulsory licensing. A study by Taylor and Silberston attempted to determine the effects of a worldwide compulsory licensing system on the economy of the United Kingdom.<sup>168</sup> Their proposed compulsory licensing system would have allowed licensing of all patents, with very little procedural or substantive requirements to obtain the license, and payment of "commercially reasonable" royalties.<sup>169</sup> The evaluation was based on analysis of important industries and questionnaires completed by various industrial companies.<sup>170</sup> Although the effect would vary depending on the type of industry, the authors concluded that this system would slightly discourage patenting and public disclosure of technology, and ultimately have a marginally adverse impact on the U.K. economy.<sup>171</sup>

Scherer et al. conducted another survey in 1958 of twenty-two large U.S. corporations to determine the importance to the companies of patent protection.<sup>172</sup> Regarding patent licensing, there was a general willingness to license patents, with reluctance to license patents covering the companies' principal products.<sup>173</sup> When questioned as to their response to a general compulsory licensing provision, over half of the companies said it would have no effect, while about a third said that they would decrease their research activity.<sup>174</sup> Thus, it seems that a reasonable compulsory licensing provision would not have much negative impact on the goals of the patent system.

#### *B. Compulsory Licensing to Prevent Blocking of Important Inventions*

The most compelling, and perhaps least controversial, argument for having a compulsory licensing provision is to resolve the problem of blocking patents. Due to the recent increase in the number of patents granted and expansion of patents into new fields (such as business methods and biotechnology), there has been an increase in the number of situations where multiple parties have conflicting property claims and a license would be beneficial to all parties, but bargaining for "that license would likely break down."<sup>175</sup> One such situation is where there is a blocking patent. This is where one patentee (the "original") has a patent

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168. See TAYLOR & SILBERSTON, *supra* note 156, at 85.

169. See *id.* at 86.

170. See *id.* at 82–83.

171. *Id.* at 349–50.

172. SCHERER, *supra* note 158, at 51.

173. *Id.* at 56.

174. *Id.* at 59.

175. Maureen A. O'Rourke, *Toward a Doctrine of Fair Use in Patent Law*, 100 COLUM. L. REV. 1177, 1179 (2000).

on an invention and another patentee (the “improver”) has a narrower patent on an improvement of that invention.<sup>176</sup> Because neither party could effectively use the improved version of the invention without infringing the other’s patent, if the parties are unable to come to a licensing agreement, the improved invention would not be used.<sup>177</sup>

Critics argue that compulsory licensing is unnecessary because any useful patent will be worked by its owner, or licensed to another if the owner is unable to work the patent.<sup>178</sup> However, this ignores the problem of blocking patents as well as the strategy of patent suppression, where the owner may obtain and hold the patent not to use it, but to prevent others from using it.<sup>179</sup> Suppression may occur if the patented product would compete with a product that the owner already produces. Companies may assemble huge portfolios of patents in a given industry, but only use a small number of the inventions. Although the unused patents would presumably be economically inferior to the used patents—because otherwise they would be used—the company may be mistaken as to the most useful patent, or the unused patents may be useful to other companies.<sup>180</sup> Thus, an invention which would be useful to the public is suppressed.

Critics also argue that even in countries with provisions for licensing when the patent is not being used, actual grants of compulsory licenses are rare.<sup>181</sup> However, this argument ignores cases where the possibility of a compulsory license encourages the parties to come to an agreement themselves as a preferable alternative to litigation.<sup>182</sup> There have been several instances in U.S. patent history where two patentees, the original inventor and the improver, have been unable to come to an agreement and the parties end up in litigation.<sup>183</sup>

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176. See Merges & Nelson, *supra* note 159, at 860.

177. See Robert P. Merges, *Intellectual Property Rights and Bargaining Breakdown: The Case of Blocking Patents*, 62 TENN. L. REV. 75, 75 (1994).

178. See Fauver, *supra* note 5, at 675.

179. See *supra* Part II.A.2.a.

180. See SCHERER, *supra* note 152, at 452.

181. See TAYLOR & SILBERSTON, *supra* note 156, at 16 (noting that sixteen applications for compulsory licenses were filed in the U.K., between 1959–68; two were allowed, one was refused, and the rest were withdrawn); Julian-Arnold, *supra* note 124, 351 n.10 (noting that Japan last granted a compulsory license for a dependent patent over twenty-five years ago, and that Switzerland had never granted one); A. Jason Mirabito, *Compulsory Patent Licensing for the United States: A Current Proposal*, 57 J. PAT. OFF. SOC’Y 404, 428 (1975) (noting that as of 1973, there had been three compulsory licenses granted in France since 1953, eight had been granted in Japan for non-working since 1960, and eleven of fifty applications had been granted for abuse since 1935 in Canada).

182. See TAYLOR & SILBERSTON, *supra* note 156, at 16.

183. See *infra* Part III.C.4; see also *United States Steel Corp. v. Phillips Petroleum Co.*, 865 F.2d 1247, 1253 (Fed. Cir. 1989) (patents involving crystalline polypropylene); *Herman v. Youngstown Car Mfg. Co.*, 191 F. 579, 584–85 (6th Cir. 1911) (patents involving engine parts).

### 1. *Cases of Blocking Patents*

Blocking patents often cause significant delays in the development of new technologies. A classic example of the problem of the blocking patent is the conflict between Marconi and De Forest.<sup>184</sup> The Marconi Wireless Telegraph Company held the Fleming patent for the diode used in the radio industry, while De Forest held patents for the triode, which was an improvement of the Fleming pioneering patent.<sup>185</sup> As holder of the dominant patent, Marconi was able to block use of the improvements, and the parties were unable to come to a licensing agreement.<sup>186</sup> The outbreak of World War I forced a resolution, but the dispute delayed the development of the radio by several years.<sup>187</sup>

Another famous case of blocking patents occurred with the Wright Brothers' patent for improving lateral stability in airplanes.<sup>188</sup> A competing patent held by Glenn Curtiss for ailerons was valid, but was held to infringe the Wright patent.<sup>189</sup> The two parties were unable to come to an agreement that would satisfy both interests: the holder of the broad patent and the holder of the improvement patent.<sup>190</sup> The outbreak of World War I led the government to arrange for the parties to come to a cross-licensing agreement.<sup>191</sup>

A more recent case of blocking patents involved public key encryption.<sup>192</sup> The method for public key encryption was invented and patented at Stanford University, and licensed to Cylink.<sup>193</sup> Soon afterwards, a team at MIT developed and patented an algorithm to perform the encryption and licensed it to RSA.<sup>194</sup> The algorithm was very successful and soon became the industry standard.<sup>195</sup> Cylink claimed that using the RSA algorithm would infringe its patent, while RSA would not allow Cylink to use its invention with RSA's commercially preferred algorithm.<sup>196</sup> Eventually the parties came to an agreement to cross license the patents.<sup>197</sup>

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184. See *Marconi Wireless Tel. Co. of Am. v. De Forest Radio Tel. & Tel.*, 236 F. 942 (S.D.N.Y. 1916), *aff'd*, 243 F. 560 (2d Cir. 1917).

185. See *id.* at 955.

186. See *Merges*, *supra* note 177, at 85.

187. See *id.* at 87.

188. *Merges & Nelson*, *supra* note 159, at 839.

189. *Wright Co. v. Herring-Curtiss Co.*, 204 F. 597, 614 (W.D.N.Y. 1913), *aff'd*, 211 F. 654 (2d Cir. 1914).

190. *Merges & Nelson*, *supra* note 159, at 890.

191. George Bittlingmayer, *Property Rights, Progress, and the Aircraft Patent Agreement*, 31 J.L. & ECON. 227, 232 (1988).

192. Steven C. Carlson, *Patent Pools and the Antitrust Dilemma*, 16 YALE J. ON REG. 359, 364 (1999).

193. *Id.*

194. *Id.*

195. *Id.*

196. *Id.*

197. *Id.*; see also *Business Wire, Inc., Cylink and RSA Data Security Reach Legal Settlement; Public Key Encryption Companies to Exchange Patent and Software Rights*, BUSINESS WIRE, Jan. 7, 1997,

## 2. *Computer Software and Business Method Patents*

An area where many blocking patents are likely to occur in the near future is computer software and business method patents. In *State Street Bank & Trust Co. v. Signature Financial Group, Inc.*,<sup>198</sup> the Federal Circuit held that a software invention was patentable subject matter as long as it produced a “useful, concrete, and tangible result,”<sup>199</sup> and that business method patents were not unpatentable merely based on subject matter.<sup>200</sup> Until recently, these business method patents were generally considered to be unpatentable, but with the *State Street* decision, there has been a huge surge of business method patents.<sup>201</sup> Many of these new patents have provoked an outcry in the business and legal communities, with accused infringers alleging that the patents are merely known business practices extended to the Internet and are therefore obvious and unpatentable.<sup>202</sup>

There have been many patents granted on very broad (and some would say, obvious) aspects of doing business over the Internet, including Priceline.com’s reverse auction patent, Sightsound.com’s patent for downloading digital music, DoubleClick’s ad-serving patent, and Amazon.com’s 1-Click patent.<sup>203</sup> Each of these patents, if valid, can be potentially infringed by a wide range of companies currently doing business over the Internet.<sup>204</sup> For example, DoubleClick sued its main competitor, 24/7 Media, for infringing its patent covering “Digital Advertising Reporting and Targeting.” 24/7 Media counter sued, alleging that DoubleClick was infringing its patent on targeted advertising to Internet users.<sup>205</sup> The two parties eventually settled and apparently agreed to cross license

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available at WESTLAW, 1/7/97 BWIRE 07:48:00 (“as part of the settlement, Cylink granted RSA all necessary rights to Cylink’s Stanford patents, and RSA granted to Cylink a license to RSA’s cryptographic software tool kits.”).

198. 149 F.3d 1368 (Fed. Cir. 1998), *cert. denied*, 525 U.S. 1093 (1999).

199. *Id.* at 1373 (quoting *In re Alappat*, 33 F.3d 1526, 1544 (Fed. Cir. 1994)).

200. *Id.* at 1373–75.

201. The number of business-method patent applications has increased “from 925 in 1997 to 2,600 in 1999,” with an estimated 7500 in 2000. The PTO “issued 205 such patents in 1997, 583 in 1999,” and an estimated 1000 in 2000. Brenda Sandburg, *Patent Office Approves Fewer Business-Method Applications*, 224 N.Y.L.J. 5, 5–6 (2000).

202. *See id.* Because European patent offices do not officially allow the patenting of business methods, there has been some conflict between American and European companies. *See* Tamara Loomis, *Business-Method Patents; While Increasingly Common in U.S., Not So in Europe*, N.Y.L.J., CORP. UPDATE, Jan. 4, 2001, at 5. European companies fear they are losing territory in the “Internet land grab.” *See id.* There has been some attempt to rectify the problem; the proposed “Business Method Patent Improvement Act of 2000” would require the PTO to publish business method patent applications and give the public the opportunity to present prior art that might disqualify the application. *See* H.R. 5364, 106th Cong. (2d. Sess. 2000); 146 CONG. REC. E1659–60 (daily ed. Oct. 4, 2000) (statement of Rep. Berman).

203. Karin E. Peterka, *Business Methods Can Be ‘Cyberpatented,’ But Beware of the Traps*, MEALEY’S CYBER TECH LITIG. REP., Nov. 2000, at 9.

204. *Id.*

205. *Id.*

each others' patents.<sup>206</sup> The large number of patents recently granted in this area will result in conflicts between patent holders who may not be able to come to licensing agreements.

### 3. *Resolution of Problem of Blocking Patents*

Although it may be argued that the original inventor and the improver will always come to an agreement if both parties will benefit, there is no guarantee that the parties will agree on how to partition the financial stakes.<sup>207</sup> There are two main reasons why they may be unable to come to an agreement.<sup>208</sup> First, it is difficult to determine the relative values of the two inventions.<sup>209</sup> The original inventor may underestimate the value of the improver's invention, or the improver may overestimate the value of his own invention.<sup>210</sup> One party may not know if the other party's assessment was made in good faith or instead was being used as a bargaining tool.<sup>211</sup> Second, the future development and profitability of the invention is uncertain.<sup>212</sup> With new and emerging technologies, it may be impossible at the beginning to tell whether the invention will be revolutionary and pioneering, or whether it will fail miserably.<sup>213</sup> Especially in the business method area, companies may have difficulty in arriving at a voluntary licensing agreement because of the difficulties in determining the value of the patent, including its possible invalidity, the scope of its protection, and the growth of future business covered by the patent.

Strategic considerations may also lead parties to delay coming to an agreement or not being able to come to an agreement at all. The original patentee may delay reaching an agreement in order to gain as much advantage as possible over the owner of the subservient patent.<sup>214</sup> This holdup problem is especially significant where the original patent contributes little value compared to the improvement patent; the original patentee loses little by delaying, and can try to gain as much value of the improvement patent as possible.<sup>215</sup> The parties may also behave irration-

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206. Business Wire, Inc., *DoubleClick Settles Patent Litigation with 24/7 Media as Well as Separate Patent Litigation with L90*, BUSINESS WIRE, Nov. 6, 2000, available at WESTLAW, 11/6/00 BWIRE 17:56:00 (stating 24/7 Media and Sabela Media have settled their patent litigations granting each other certain rights in their respective patents).

207. See *Merges*, *supra* note 177, at 82–83.

208. *Id.* at 75.

209. See *id.*

210. See *id.* at 89.

211. *Id.* at 89–90.

212. *Id.*

213. For example, IBM originally saw no commercial demand for the computer, and in 1956, the company that developed the forerunner of the VCR estimated that it would primarily be used only for broadcasters. *Id.* at 86 nn.41–42.

214. *Merges & Nelson*, *supra* note 159, at 865.

215. *Id.* at 865–66.

ally, such as if they are acting out of pride, resentment, anger, or spite.<sup>216</sup> One can imagine a case where the original inventor believes that the improver has no right at all to “his” invention, thus leading to extreme bargaining difficulties.<sup>217</sup>

Compulsory licensing would resolve these deadlocks by allowing the improver to use the threat of a compulsory license to force the original patentee to come to terms with the agreement. If the original patentee refused to come to terms, the improver would be able to attempt to obtain a compulsory license. A compulsory licensing provision would also avoid the holdup problems that occurred in the Wright Brothers and Marconi cases, where the development of important technology was delayed due to bargaining breakdown.

A criticism of allowing compulsory licensing is that it is difficult for a court to determine the proper royalty rate; the parties themselves are seen as better evaluators of royalty rates.<sup>218</sup> However, this ignores the likelihood that in most cases, the mere threat of a compulsory license will force the parties to come to an agreement on royalty rates.<sup>219</sup> Also, the courts do have experience in determining royalty rates in patent infringement suits.<sup>220</sup>

There have been other proposals to deal with the problem of blocking patents. One solution is the reverse doctrine of equivalents, which states that even if an accused infringer literally infringes the claims, he will not be held to infringe if he has changed the principle of the invention so much that it has ceased to represent the original invention.<sup>221</sup> However, this doctrine is rarely applied by the courts, and is only applicable to radically different inventions.<sup>222</sup> Another proposed doctrine is “fair use” in patent law.<sup>223</sup> Analogous to the doctrine of fair use in copyright law, this would allow a person who would otherwise be infringing to use another’s patent right—possibly with compensation—in certain situations, depending on the nature of the use and the patent and the impact that the use would have.<sup>224</sup> While the arguments for these proposals have merit, compulsory licensing seems to be simpler to implement and more effective in application.

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216. Merges, *supra* note 177, at 90.

217. *Id.*

218. *See id.* at 99–101.

219. *See* TAYLOR & SILBERSTON, *supra* note 156, at 16.

220. *See infra* Part IV.C.

221. *See* Merges & Nelson, *supra* note 159, at 864.

222. *See* Phillips Petroleum Corp. v. United States Steel Corp., 673 F. Supp. 1278, 1350 (D. Del. 1987), *aff’d*, 865 F.2d 1247 (Fed. Cir. 1989).

223. *See* O’Rourke, *supra* note 175, at 1177.

224. *See id.* at 1205; *see also* Julie S. Turner, Comment, *The Nonmanufacturing Patent Owner: Toward a Theory of Efficient Infringement*, 86 CAL. L. REV. 179 (1998) (arguing that patent owners who do not use their patents should be denied injunctive relief).

*C. Harmonization of International Patent Law and Non-use of Patents*

The patent systems of the industrialized world have become increasingly uniform.<sup>225</sup> It is not hard to speculate that, in the next twenty years or so, an inventor will be able to apply for something like a “world patent” for protection in all major industrial countries.<sup>226</sup> Most other countries have provisions for granting compulsory licenses, especially when the patent is not being worked. The prevalence of provisions in other major industrial countries indicates that these countries find compulsory licensing beneficial. Although it is unlikely that a world patent system would *require* the United States to have a provision for granting compulsory licenses, it would be to our benefit to do so.<sup>227</sup>

A compulsory licensing provision would ensure that the American public is adequately supplied with a product. If the patentee is unable to produce enough supply to meet the demand for the product, another producer should be able to license the product to meet the demand.<sup>228</sup> A situation could occur where a foreign company owning a U.S. patent would either refuse to export the product to the United States or not have the capacity to supply U.S. demand. A compulsory licensing provision would allow other manufacturers to produce the product to satisfy the domestic demand.<sup>229</sup> This would create parity: domestic manufacturers would have the same opportunities to exploit patents owned by foreign companies as foreign manufacturers have to exploit foreign patents owned by U.S. companies.

A criticism of allowing compulsory licensing for non-use of patents is that it would benefit foreign countries at the expense of the United States.<sup>230</sup> Other countries have compulsory licensing provisions because most of the patentees are foreign, and thus granting compulsory licenses benefits their domestic industries at the expense of foreign patent holders.<sup>231</sup> In contrast, in the United States a majority of U.S. patents are owned by U.S. companies, and thus compulsory licensing would benefit foreign companies operating in the United States.<sup>232</sup> However, the foreign-inventor percentage of U.S. patents is steadily increasing, while the

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225. See *supra* Part II.B.1.

226. E.g., Mossinghoff & Kuo, *supra* note 97, at 530.

227. See Mirabito, *supra* note 20, at 434–35.

228. See Fauver, *supra* note 5, at 668–69.

229. See Mirabito, *supra* note 20, at 434–35 (noting that a compulsory licensing statute would allow a domestic company to compel “a foreign company holding a U.S. patent for defensive purposes to license the patent to it.”).

230. Fauver, *supra* note 5, at 678–79.

231. For example, almost ninety-five percent of Canadian patents were granted to nonresidents in 1971, which led to little opposition to the Canadian provision for compulsory licensing of pharmaceutical patents. Whitaker, *supra* note 161, at 161.

232. See U.S. PATENT & TRADEMARK OFFICE, PATENT COUNTS BY COUNTRY/STATE AND YEAR, UTILITY PATENTS, JANUARY 1, 1963–DECEMBER 31, 1999 (MARCH 2000) (showing that in 1999, 55% of utility patents in the United States were granted to U.S. inventors), available at [http://www.uspto.gov/web/offices/ac/ido/oeip/taf/all\\_tech.pdf](http://www.uspto.gov/web/offices/ac/ido/oeip/taf/all_tech.pdf).

U.S.-inventor percentage of European and other foreign patents is sizeable.<sup>233</sup> Therefore, it is becoming increasingly important that U.S. companies have the same chance to license foreign-owned patents as foreign companies have to license U.S.-owned patents. Also, domestic companies would have a better opportunity to negotiate a license to supply the U.S. market than a foreign company, and thus foreign companies would not benefit at the expense of U.S. companies.<sup>234</sup> Therefore, compulsory licensing should aid U.S. companies by allowing them access to U.S. patents owned by foreign companies.<sup>235</sup>

Theoretically, compulsory licensing for non-use would not cut into the patentee's profits, because the patentee was unable to meet the demand in the first place and would be able to obtain a reasonable royalty from the licensee.<sup>236</sup> This argument, however, ignores the financial benefit of the patentee's original monopoly position. The holder of a monopoly can intentionally undersupply a product in order to maximize profits; these profits would be undercut by the holder of the license.<sup>237</sup> Of course, if the patentee is not producing the product at all, these objections become irrelevant. Thus, a policy based on adequacy of supply must be carefully limited so that it ensures that a product is available to the public, without cutting into the patent monopoly of a legitimate producer.

#### IV. RESOLUTION

##### A. *When Should Compulsory Licensing Be Allowed?*

After reviewing the arguments for and against compulsory licensing, it is clear that compulsory licensing has an important, but limited, place in the U.S. patent system. A carefully crafted extension of compulsory licensing would enhance the public interest while still maintaining the incentive to develop new inventions. It is important that compulsory licensing be allowed only where truly necessary to promote the public interest, while not significantly reducing the incentive to develop new technology.

The strongest arguments for compulsory licenses are to resolve the problem of blocking patents and to ensure the domestic use of the patented invention. These are the two cases where the patentee has the least to lose and the public has the most to gain. In the case of blocking

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233. *See id.* (showing that the percentage of U.S. patents granted to foreign inventors has increased from an average of 34% in the years before 1987 to 46% in 1999); EPO Annual Report 1999 (showing that in 1999, 26% of European patents were granted to U.S. inventors), available at [http://www.european-patent-office.org/epo/an\\_rep/1999/pdf/ff99.pdf](http://www.european-patent-office.org/epo/an_rep/1999/pdf/ff99.pdf) (last updated on June 19, 2000).

234. *See Fauver, supra* note 5, at 679.

235. *See id.* at 680.

236. *See id.* at 669.

237. *See id.*

patents, a compulsory licensing provision would allow the improver to use his invention by giving the parties an incentive to come to an agreement or by forcing a solution if the parties are unable to come to an agreement. Likewise, when the patent is not being used in the United States, the patentee has broken part of the agreement: although he has gained the right to exclude others from using the invention, he has not made the invention available to the public. By allowing a license, the patentee gains a reasonable royalty and the public gains use of the invention. In each case, the provision would be used rarely enough that it should not significantly impact the incentive of parties to develop new technology.

Compulsory licensing should not be expanded to cover food and medicine patents.<sup>238</sup> Proposals such as the Affordable Prescription Drugs Act<sup>239</sup> will be opposed; it is unlikely that there would be support for granting compulsory licenses for pharmaceutical products, since the policy has been to grant more protection for pharmaceutical products, not less.<sup>240</sup> Because of the high development costs of new drugs, pharmaceutical companies need patent protection to recoup their investment and to provide incentives to develop new drugs.<sup>241</sup> Any provision allowing for compulsory licensing of pharmaceutical patents would have a detrimental effect on the development of new medicines.<sup>242</sup>

Therefore, the proposed compulsory licensing system would contain provisions for licenses in only two cases: where an important later invention was being blocked, and where the invention was not being used in the United States.

### B. Proposed Provision for Granting Compulsory Licenses

Because the judiciary, especially the Federal Circuit, has been reluctant to order compulsory licensing, the plan would have to be instituted legislatively. A legislative definition of compulsory licensing would also be more definite and would give both patentees and the public notice in advance of the scope of the compulsory licensing doctrine.<sup>243</sup> The compulsory licensing system would have to be in accord with the provisions

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238. See Julian-Arnold, *supra* note 124, at 368 (“Pharmaceuticals are therefore too important *not* to protect.”).

239. H.R. 2927, 106th Cong. (1st Sess. 1999).

240. The Drug Price Competition Act and Patent Term Restoration Act allowed patent terms to be extended for time lost in awaiting approval from the FDA, and the Orphan Drug Act allowed special protection for drugs to combat rare diseases. See Ackiron, *supra* note 1, at 156–57.

241. See Alan M. Fisch, *Compulsory Licensing of Pharmaceutical Patents: An Unreasonable Solution to an Unfortunate Problem*, 34 JURIMETRICS J. 295, 303–04 (1994) (noting that only 1 in 4000 discovered compounds ever become products and that a product approved for sale averages \$231 million in research and development costs).

242. See *id.* at 313 (“[E]conomic analysis demonstrates that compulsory licensing of pharmaceutical patents could significantly curtail future pharmaceutical research.”).

243. See S. Delvalle Goldsmith, *The Case for “Restricted” Compulsory Licensing*, 2 AM. PAT. L. ASS’N Q.J. 146, 153 (1974).

of Article 31 of the TRIPs agreement. To obtain the compulsory license, the potential licensee would begin a proceeding in a federal district court. The applicant would have to show that he was unsuccessful in negotiating a license on reasonable terms with the patentee.<sup>244</sup> The applicant would specify the grounds for granting the license, while the patentee would be able to dispute the necessity of granting the license.<sup>245</sup> The applicant would also be required to show that the proposed use of the license was primarily for the U.S. market.<sup>246</sup> The patent holder would have the right to appeal both the grant of the license and the amount of the royalty to the Court of Appeals for the Federal Circuit.<sup>247</sup> If circumstances substantially changed, the patentee would be able to have the court review the continued existence of the license.<sup>248</sup>

For the case of blocking patents, the owner of the improvement patent would be able to obtain a license for the original patent under the following conditions. The invention claimed in the second patent would have to be an important advance and economically significant compared to the invention covered by the first patent.<sup>249</sup> The owner of the original patent would be able to obtain a cross license on reasonable terms to use the invention covered by the second patent.<sup>250</sup>

For the non-use provision, the definition of non-use would be strictly construed; if the item was available through importation, no license would be available. Also, if the patentee had multiple patents on several similar patents with the same utility, but only chose to market a product based on one of the patents, this would not be considered non-use because the public has access to the product.<sup>251</sup> The applicant would not be able to apply for a license until four years after the date of filing of the patent application or three years after the date of the grant of the patent, whichever period expires last.<sup>252</sup> An industry specific time period

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244. TRIPs, *supra* note 106, art. 31(b), 33 I.L.M. 81.

245. See W. Brown Morton, Jr., *Compulsory Licensing—An Unplanned-for Addition to the United States Patent System*, 2 AM. PAT. L. ASS'N Q.J. 171, 182 (1974).

246. TRIPs, *supra* note 106, art. 31(d)–(f), 33 I.L.M. 81.

247. See *id.* art. 31(i)–(j). The Federal Circuit is the obvious choice for the required appellate court due to the court's experience in patent issues.

248. *Id.* art. 31(g).

249. *Id.* art. 31(l)(i).

250. *Id.* art. 31(l)(ii).

251. See Whitaker, *supra* note 161, at 157.

252. Paris Convention, *supra* note 95, art. 5, 21 U.S.T. at 1636–37, 828 U.N.T.S. at 321. It has been argued that the idea behind compulsory licensing provisions for non-use was to permit others to use an invention when it became apparent that the patentee either lost interest or did not have the capabilities to exploit the invention. ROBERT M. SHERWOOD, INTELLECTUAL PROPERTY AND ECONOMIC DEVELOPMENT 186 (1990). Lead times for many products are at least five years, and thus a longer period of time should be required before an application for a compulsory license should be permitted. *Id.* at 186–87. However, many software and business method inventions have development times of less than five years, so on average the three or four years stipulated by the Paris Convention should be enough time for the patentee to work the invention and thus avoid the specter of compulsory licensing. In any case, if the patentee has a legitimate reason for not working the invention yet, the license would not be granted.

could be specified, but it would be unduly complicated to decide to which industry an invention would belong, and to decide on the appropriate time periods for different industries.<sup>253</sup> If the patentee had legitimate reasons for not working the invention, such as long development times or the necessity of obtaining government approval, the applicant would be refused.<sup>254</sup>

### C. Determination of Royalty Rates

The proper determination of royalty rates for compulsory licenses is a difficult one in theory, but less difficult in practice.<sup>255</sup> The existence of a compulsory licensing provision would provide a strong incentive for parties to negotiate among themselves to reach an agreement.<sup>256</sup> If the parties cannot reach an agreement, remedies for antitrust violations and patent infringement provide ample precedent for determining royalty rates by using expert testimony. The maximum royalty that could be set would be that which would enable the patentee to realize profits as large as if he still retained a monopoly.<sup>257</sup> This would not adversely effect the patentee's incentive to innovate.<sup>258</sup> A royalty rate far below this would weaken incentives for innovation, and also permit strong price competition.<sup>259</sup> Therefore, the royalty rate would be similar to the "reasonable royalty" rate of patent infringement suits: the amount that the licensee would be "willing to pay as a royalty and yet be able to make and sell the patented article, in the market, at a reasonable profit."<sup>260</sup>

## V. CONCLUSION

Although a common provision in other countries, compulsory licensing of patents is rarely used in the United States. The judiciary has generally refused to use compulsory licensing except to remedy antitrust violations, while proposed comprehensive compulsory licensing legislation has drawn strong opposition in Congress. The usefulness of compulsory licensing in certain situations suggests the need for a legislative provision for compulsory licensing in the United States. This provision would allow for compulsory licensing in the case of non-use of the patent and where one patent blocked a later one.

The proposed legislation would permit applications for compulsory licenses in two cases: when the invention was not being used or was not

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253. SHERWOOD, *supra* note 252, at 187.

254. Paris Convention, *supra* note 95, art. 5, 21 U.S.T. at 1636-37, 828 U.N.T.S. at 321.

255. PENROSE, *supra* note 115, at 174.

256. *See id.*

257. SCHERER, *supra* note 158, at 43.

258. *Id.*

259. *Id.* at 43-44.

260. Goodyear Tire & Rubber Co. v. Overman Cushion Tire Co., 95 F.2d 978, 984 (6th Cir. 1937) (citing language found in Rockwood v. General Fire Extinguisher Co., 37 F.2d 62, 66 (2d Cir. 1930)).

available in the United States, and when the use of the applicants' patented invention was being blocked by a previous invention. These are the two cases where the patentee has the least to lose and the public has the most to gain. Where the invention is not being used, the patentee gains a reasonable royalty and the public gains access to the invention. In the case of blocking patents, compulsory licensing would resolve bargaining deadlocks with either the threat or the implementation of a compulsory license forcing the original patentee to come to terms with the improver. This would help to avoid occasions where the development of important technology was delayed due to bargaining breakdown. In each case, the provision would be used rarely enough that it should not significantly impact the incentive of parties to develop new technology. Thus, compulsory licensing would be a beneficial addition to the U.S. patent system.