

# SOFTWARE PATENT LAW: UNITED STATES AND EUROPE COMPARED

*Software is a global business. Patents are increasingly the protection of choice; as a consequence, international software patent laws are of growing importance to software vendors. This article focuses on European patent law and how it differs from United States law in regards to software technology. Statutes and relevant case law of both unions are discussed and compared, providing an introductory secondary source for scholars and practitioners.*

## Introduction

In the past, industrial countries had their own patent laws and offices. Those seeking protection in a specific country had to apply for a national patent and obey local laws. With increasing globalization, international agreements were made and organizations founded to reconcile regional differences: The 1883 *Paris Convention*<sup>1</sup> was based on the principle of reciprocal national treatment and therefore dealt more with international comity than the unification of patent laws. The 1970 *Patent Cooperation Treaty* (PCT)<sup>2</sup> finally implemented international one-stop patents.<sup>3</sup> Both treaties are administered by the World Intellectual Property Organization (WIPO).<sup>4</sup>

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<sup>1</sup> The Paris Convention for the Protection of Intellectual Property was enacted on March 20, 1883. It has been amended most recently in 1970.

<http://www.wipo.int/clea/docs/en/wo/wo020en.htm>.

<sup>2</sup> The Patent Cooperation Treaty (PCT) was adopted on June 19, 1970 in Washington, D.C., and has been encoded in 35 U.S.C. §§ 351-76 (2000). 28 U.S.T. 7645. It has been modified most recently in October 2001. <http://www.wipo.org/pct/en/index.html>.

<sup>3</sup> International one-stop patents—generally called PCTs after the enabling treaty—are patents that are recognized by all WIPO member countries (*see* n.4, *infra*). For the U.S., *see* 35 U.S.C. § 363. PCTs are locally administered by the patent office of each nation. For the U.S., *see* 35 U.S.C. § 361. However, PCTs may also be filed with WIPO's International Bureau in Geneva, Switzerland, enabling inventors in developing member countries, which lack able patent offices, to file for (international) patents. *PCT Applicant's Guide Vol. I: Introduction to the International Phase*, ¶ 49, available at <http://www.wipo.org/pct/en/index.html>.

<sup>4</sup> The World International Property Organization (WIPO) has its root in the 1883 Paris Convention, discussed *supra*. In 1974, it became a part of the United Nations' system of organizations with headquarters in Geneva, Switzerland. Today, the Organization counts 179 member states (as of October 15, 2002). *See* <http://www.wipo.org/>.

The new trend is to include intellectual property matters in trade agreements: In 1995, the World Trade Organization (WTO)<sup>5</sup> passed the *Agreement on Trade-Related Aspects of Intellectual Property Rights* (TRIPS)<sup>6</sup> to reconcile the world's patent laws. The agreement imposes uniform minimal standards modeled after the laws of industrialized nations and is part of the *General Agreements of Tariffs and Trade* (GATT), the purpose of which was to eliminate trade barriers.<sup>7</sup>

Still, even developed countries differ on which inventions should be patentable, especially when it comes to recent technology. Software is not an exception: While the United States has opened the doors for patents of business methods and mathematical algorithms (as long as they have a useful application)<sup>8</sup> other countries are divided. Japan and Asia in general seem to follow the U.S.'s lead, while Europe is still more conservative on the issue.<sup>9</sup>

This article discusses European software patent law comparing it to similar and distinct holdings in the United States. While European patents - issued by the European Patent Office - are binding on all countries of the European Union, each country also maintains its own patent office and applies its own laws. However, efforts are undertaken to reconcile those laws with EU standards, making the patent law of a particular member country decreasingly relevant. A detailed discussion of the laws of each country would go beyond the scope of this article and is therefore limited to highly relevant issues.

### **Statutes and Fundamental Case Law**

Based on Article I of the U.S. Constitution,<sup>10</sup> the United States enacted the Patent Act (most recently in 1952<sup>11</sup>), which has been encoded in Title 35 of the United States Code;<sup>12</sup> § 101 of the Title requires that an invention be novel and useful to be patentable. It also requires an invention to fit into one of four categories: (1) processes, (2) machines, (3) manufactures or (4)

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<sup>5</sup> The World Trade Organization (WTO) was established in 1995 as a result of the Uruguay Round negotiations (1986-94). It is headquartered in Geneva, Switzerland, and counts 144 member states as of January 1, 2002. <http://www.wto.org/>.

<sup>6</sup> *Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS)*, GENERAL AGREEMENT ON TARIFFS AND TRADE [GATT], URUGUAY ROUND, FINAL ACT, at 319 (1994), available at [http://www.wto.org/english/docs\\_e/legal\\_e/final\\_e.htm](http://www.wto.org/english/docs_e/legal_e/final_e.htm).

<sup>7</sup> [http://www.wto.org/english/thewto\\_e/whatis\\_e/tif\\_e/fact1\\_e.htm](http://www.wto.org/english/thewto_e/whatis_e/tif_e/fact1_e.htm).

<sup>8</sup> *State St. Bank & Trust Co. v. Signature Fin. Group*, 149 F.3d 1368, 1374 (Fed. Cir. 1998).

<sup>9</sup> See e.g. Aaron Winninger, *Business Method Patents Appear to Gain Ground Overseas*, INTELLECTUAL PROPERTY TODAY, Dec. 2001, at 30, 30-31.

<sup>10</sup> U.S. Const. art. I, § 8, cl.8.

<sup>11</sup> 35 U.S.C. § 1.

<sup>12</sup> See *id.* §§ 1-376.

compositions of matter. Categories (2) to (4) are generally referred to as products, as opposed to the processes of category (1).

§ 102 defines novelty as distinguishable from prior art, and introduces statutory bars that require inventors to apply for patents within reasonable time (twelve months). § 103 further requires that an invention must also be non-obvious to a person having ordinary skill in the art. The courts have further established that laws of nature, scientific phenomena, and mathematical formulae are excluded from patentability,<sup>13</sup> as exclusive rights to such fundamental “scientific truths” of our world would grant unreasonable control to individuals.<sup>14</sup>

Europe’s counterpart to U.S.C. Title 35 is the *European Patent Convention*.<sup>15</sup> § 52 of the Convention defines patentable inventions: “European patents shall be granted for any inventions susceptible of industrial application, which are new and which involve an inventive step.”<sup>16</sup> The U.S. Supreme Court’s opinion in *State Street Bank & Trust Company v. Signature Financial Group*, discussed *infra*, deeming the § 101 categorization of inventions of little relevance, seems satisfied here.<sup>17</sup> Inventions are not categorized at all.<sup>18</sup> Instead, the Convention only requires (1) industrial applicability, (2) novelty and (3) an inventive step.

Novelty is defined in § 54 of the Convention as “not form[ing] a part of the state of the art.”<sup>19</sup> And what Europe calls the “inventive step” mirrors the U.S. non-obviousness requirement; § 56 states that “[a]n invention shall be considered as involving an inventive step if . . . it is *not obvious* to a person skilled in the art.”<sup>20</sup>

Industrial applicability may be viewed as similar to the usefulness requirement of 35 U.S.C. § 101. In fact, “industrial application” is defined in E.P.C. § 57 as meaning that the

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<sup>13</sup> See *Mackay Radio & Tel. Co. v. Radio Corp. of Am.*, 306 U.S. 86, 94 (1939); *Funk Bros. Seed Co. v. Kalo Inoculant Co.*, 333 U.S. 127, 130 (1948).

<sup>14</sup> *Mackay Radio*, 306 U.S. at 94.

<sup>15</sup> European Patent Convention [E.P.C.] (1998) (originally enacted Oct. 5, 1973), available at <http://www.european-patent-office.org/legal/epc/index.html>.

<sup>16</sup> E.P.C. § 52(1) (1998), available at <http://www.european-patent-office.org/legal/epc/e/ar52.html>.

<sup>17</sup> *State St. Bank & Trust Co. v. Signature Fin. Group*, 149 F.3d 1368, 1375 (Fed. Cir. 1998) (holding that “[t]he question whether a claim encompasses statutory subject matter should not focus on which of the four categories of subject matter a claim is directed to.”)

<sup>18</sup> *But see* E.P.C. R. 29(2) (2001) (limiting the number of claims in a patent application per subject matter category and identifying product, process, apparatus and use as the categories), available at <http://www.european-patent-office.org/legal/epc/e/r29.html>.

<sup>19</sup> E.P.C. § 54(1), available at <http://www.european-patent-office.org/legal/epc/e/ar54.html>.

<sup>20</sup> E.P.C. § 56 (emphasis added), available at <http://www.european-patent-office.org/legal/epc/e/ar56.html>.

invention “can be . . . *used* in any kind of industry, including agriculture.”<sup>21</sup> However, anything useful to the industry, which would clearly include software, does not automatically qualify. Instead, an invention must be of technical nature in order to be patentable.<sup>22</sup> Clause 2 of § 52 lists what types of inventions are particularly viewed as non-technical and are therefore excluded from patentability:

- (a) discoveries, scientific theories and mathematical methods;
- (b) aesthetic creations;
- (c) schemes, rules and methods for performing mental acts, playing games or doing business, and programs for computers;
- (d) presentation of information.<sup>23</sup>

The entries “mathematical methods,” “presentation of information” and particularly “programs for computers” as well as “methods for . . . doing business” are clearly detrimental to the patentability of software. The courts have also rejected computer-related inventions because they supposedly only automated “mental tasks.”<sup>24</sup>

Overall, the legal basis for patentability appears similar in the United States and Europe. The statutes of each union and early United States cases resolving only general issues of patentability do not reveal conclusively which continent is more inclined to include software in the scope of its patent laws. An analysis of recent court decisions is necessary to answer this question.

### **Patentability of Software**

In the beginning, United States courts treated software suspiciously: In the 1970s, the Supreme Court held that software was essentially mathematical formulae, not patentable under U.S. law.<sup>25</sup> However, in 1981, the Supreme Court decided in *Diamond v. Diehr* that an invention could not be denied a patent solely because its claims contained mathematical formulae.<sup>26</sup>

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<sup>21</sup> E.P.C. § 57 (emphasis added), available at <http://www.european-patent-office.org/legal/epc/e/ar57.html>.

<sup>22</sup> See E.P.C. R. 29(1).

<sup>23</sup> E.P.C. § 52(2).

<sup>24</sup> See e.g. In re Siemens A.G., 1991 O.J.E.P.O. 566, 567-68 (Tech. Bd. App. 1989) (denying the patentability of a “process for displaying [foreign] characters” because “[t]he improvement . . . achieved by technical means simply facilitated mental activity.”), available at <http://legal.european-patent-office.org/dg3/biblio/t880158ep1.htm>.

<sup>25</sup> *Gottschalk v. Benson*, 409 U.S. 62, 72 (1972) (holding that a mathematical algorithm itself is not patentable but adding that it may be that the patent law should be extended to cover programs); *Parker v. Flook*, 437 U.S. 584, 596 (1978) (refusing to overrule or expand *Gottschalk* without a clear signal from Congress).

<sup>26</sup> *Diamond v. Diehr*, 450 U.S. 175, 187 (1981).

Instead, the court required a look at the invention as a whole.<sup>27</sup> Two exceptions remained in place: the mathematical algorithm exception<sup>28</sup> and, arguably, the business method exception.<sup>29</sup>

In 1998, the Court of Appeals for the Federal Circuit threw out both exceptions in *State Street Bank & Trust Company v. Signature Financial Group*.<sup>30</sup> It found the mathematical algorithm test misleading<sup>31</sup> and determined that the business method exception had never existed: prior business method inventions had always been denied on other grounds.<sup>32</sup> The court held that instead of focusing on categories of subject matter, it should ascertain the invention's practical utility, which should then be tested together with the requirements of novelty and non-obviousness.<sup>33</sup>

In 1999, the court limited *State Street* returning to its prior holding of *In re Alappat* that algorithms are patentable because they limit a general-purpose computer to a specific purpose, performing functions pursuant to the software.<sup>34</sup> This statement is narrower than *State Street*'s broad holding that mathematical algorithms were patentable as long as their application “produced a ‘useful, concrete, and tangible result.’”<sup>35</sup>

In Europe, the exclusionary list of E.P.C. § 52(2), *supra*, is curtailed by clause 3:

The provisions of [clause] 2 shall exclude patentability of the subject-matter or activities referred to in that provision only to the extent to which a European patent application or European patent relates to such subject-matter or activities *as such*.<sup>36</sup>

The “as such” requirement led to holdings similar to *Diehr*, discussed *supra*. For example, the Technical Board of Appeal of the European Patent Office held that even if the idea underlying an invention resides on matter excluded under § 52(2), the invention may nevertheless be patentable if it is directed at a technical process, as long as no protection is sought for the

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<sup>27</sup> *Id.* at 192-93.

<sup>28</sup> The courts created the Freeman-Walter-Abele test to determine whether an algorithm only represents an abstract idea. *See In re Pardo*, 684 F.2d 912, 915 (CCPA 1982); *see also* Application of Freeman, 573 F.2d 1237, 1246 (CCPA 1978); Application of Walter, 618 F.2d 758, 767 (CCPA 1980); *In re Abele*, 684 F.2d 902, 907 (CCPA 1982).

<sup>29</sup> The business method exception had been implied to exist but never explicitly upheld. *See e.g.* *In re Howard*, 394 F.2d 869, 872 (CCPA 1968) (mentioning the alleged business method exception but stopping short of deciding whether business methods are inherently unpatentable as suggested by concurring Judge Kirkpatrick).

<sup>30</sup> *State St. Bank & Trust Co. v. Signature Fin. Group*, 149 F.3d 1368, 1373-77 (Fed. Cir. 1998).

<sup>31</sup> *Id.* at 1373 n.4.

<sup>32</sup> *Id.* at 1375.

<sup>33</sup> *Id.*

<sup>34</sup> *WMS Gaming, Inc. v. Int'l Game Tech.*, 184 F.3d 1339, 1348-49 (Fed. Cir. 1999) (quoting *In re Alappat*, 33 F.3d 1526, 1545 (Fed. Cir. 1994)).

<sup>35</sup> *State St.*, 149 F.3d at 1373-75 (quoting *Alappat*, 33 F.3d at 1544).

<sup>36</sup> E.P.C. § 52(3) (emphasis added).

excluded matter as such.<sup>37</sup> In 1979, Vicom Systems, a California-based incorporation, filed an application for a “[m]ethod and apparatus for improved digital image processing.”<sup>38</sup> Vicom had already filed for a corresponding U.S. patent in 1978, which had been granted in 1982.<sup>39</sup> However, the Examining Division of the European Patent Office rejected the application.

The application included claims for both a method and an apparatus. The Examining Division held that the method claims were either related to a mathematical method and therefore excluded under § 52(2), or they did not add a technical feature in violation of Rule 29.<sup>40</sup> After being stripped of patentability for the methodical part, the remaining apparatus claims lacked novelty.<sup>41</sup> The Division further noted that the normal implementation of the claimed method would be a computer program and therefore would literally fall within § 52(2)(c).<sup>42</sup>

The Technical Board of Appeal reversed, noting that digital image processing is not an abstract process but a “real world activity”<sup>43</sup> and held that “even if the idea underlying an invention may be considered to reside in a mathematical method, a claim directed to a technical process in which the method is used does not seek protection for the mathematical method *as such*.”<sup>44</sup> The Board rationalized its decision, stating that “[t]here can be little doubt that any processing operation on an electric signal can be described in mathematical terms” and that “there is no basis in the E.P.C. for treating digital filters differently from analogue ones [, which are patentable].”<sup>45</sup>

Further similarities to U.S. holdings can be found. The requirement espoused in *Diehr* of looking at an invention as a whole<sup>46</sup> was expressed by the Technical Board of Appeal in *Siemens A.G. v. Koch & Sterzel GmbH & Co.*<sup>47</sup> The Board held that it is “unnecessary to weigh up the technical and non-technical features” and that “if the invention . . . uses technical means, its patentability is not ruled out.”<sup>48</sup> The opinion in *Alappat* that computer programs are patentable

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<sup>37</sup> In re Vicom Sys., Inc., 1987 O.J.E.P.O. 14, 19 (Tech. Bd. App. 1986), available at <http://legal.european-patent-office.org/dg3/biblio/t840208ep1.htm>.

<sup>38</sup> European Patent Application No. 0,005,954 (filed May 22, 1979), available at <http://l2.espacenet.com/espacenet/viewer?PN=EP0005954&CY=ep&LG=en&DB=EPD>.

<sup>39</sup> U.S. Patent No. 4,330,833 (issued May 18, 1982).

<sup>40</sup> Vicom, 1987 O.J.E.P.O. at 14.

<sup>41</sup> *Id.* at 14-15.

<sup>42</sup> *Id.*

<sup>43</sup> *Id.* at 16.

<sup>44</sup> *Id.* at 19.

<sup>45</sup> *Id.*

<sup>46</sup> *Diamond v. Diehr*, 450 U.S. 175, 192 (1981).

<sup>47</sup> *Siemens A.G. et al. v. Koch & Sterzel GmbH & Co.*, 1988 O.J.E.P.O. 19, 24 (Tech. Bd. App. 1987), available at <http://legal.european-patent-office.org/dg3/biblio/t860026ep1.htm>

<sup>48</sup> *Id.*

because they limit a general purpose computer to a specific purpose<sup>49</sup> is mirrored in *In re Dai Nippon Insatsu*, where the Board held that “the units of the claimed [specifically designed] apparatus are to be regarded as differing from ‘conventional’ ones” and that “such programs [i.e. programs that limit the conventional apparatus to specific tasks] are . . . to be regarded as tools.”<sup>50</sup>

The closest Europe ever came to *State Street* was in *In re Sohei*, when the Board held that an otherwise patentable computer program would not lose its patentability merely because additional features fall within subject matter excluded under § 52(2).<sup>51</sup> The invention at issue concerned an inventory management system, which arguably fell within the business method exception.<sup>52</sup> However, several years later, the Board reaffirmed that business methods as such are excluded from patentability and that the mere addition of a technical feature to an otherwise non-technical method did not confer technical character upon the invention.<sup>53</sup> Thus while a technical invention does not lose its patentable status because of a non-technical feature, a non-technical invention does not gain such status via inclusion of a technical feature.<sup>54</sup>

It is notable that, especially in the beginning, the majority of European software patents were not issued to European companies, but mostly to companies from the United States and also Japan. Ironically, this result seems to stem from the fact that Europeans, accustomed to clear statutory laws, simply assumed that computer programs weren’t patentable because they were literally excluded in § 52(2), while Americans, weren’t discouraged as easily.<sup>55</sup> It is alleged that large American corporations such as IBM purposely challenged large European corporations such as Siemens on software patent matters in order to create case law.<sup>56</sup>

It appears that the patentability of software is well established on both sides of the Atlantic. That computer programs can be patented is not a question anymore. The focus is on the context; while Europe insists that its technicity requirement<sup>57</sup> bars inventions without at least some physical effect from patentability, the United States has abandoned the notion that

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<sup>49</sup> *In re Alappat*, 33 F.3d 1526, 1545 (Fed. Cir. 1994).

<sup>50</sup> *In re Dai Nippon Insatsu Kabushiki Kaisha*, no. T 0605/93, slip op. at 10 (Tech. Bd. App. Jan. 20, 1995), available at <http://legal.european-patent-office.org/dg3/biblio/t930605eul.htm>.

<sup>51</sup> *In re Sohei*, 1995 O.J.E.P.O. 525, 538-39 (Tech. Bd. App. 1994), available at <http://legal.european-patent-office.org/dg3/biblio/t920769ep1.htm>.

<sup>52</sup> *Id.* at 534.

<sup>53</sup> *In re Pension Benefit Sys. P’ship*, 2001 O.J.E.P.O. 441, 450 (Tech. Bd. App. 2000), available at <http://legal.european-patent-office.org/dg3/biblio/t950931eul.htm>.

<sup>54</sup> *See Id.* at 450-51.

<sup>55</sup> *See Jürgen Betten, Patentschutz von Computerprogrammen [Patent Protection of Computer Programs]*, GEWERBLICHER RECHTSCHUTZ UND URHEBERRECHT [GRUR] [COMMERCIAL LEGAL PROTECTION AND COPYRIGHT], Dec. 1995,775.

<sup>56</sup> *See Id.*

<sup>57</sup> *See E.P.C. R. 29(1).*

patentable inventions must somehow exist in the physical world. This is clearly reflected in explicitly including business methods within patentable subject matter.<sup>58</sup>

However, whether an invention can be patented is not only determined by the patentability of the subject matter. The definition of inventorship, the application process, and even the granted rights play more than a nominal role in answering this question.

## Patent Rights and Process

### *Who Can File For A Patent?*

The first step in getting a patent is to file a patent application. Even at this early stage European patent law differs from American law. In the U.S., the person who may claim a patent for an invention must be the inventor.<sup>59</sup> This is known as the first-to-invent rule, a rule that, though seemingly fairer on its face, has proved troublesome at times.<sup>60</sup> Europe is more pragmatic; whoever files a patent application first is presumed to be the inventor (first-to-file rule).<sup>61</sup> The purpose of the first-to-file system is to discourage inventors from withholding an invention, while at the same time unburdening the patent office.<sup>62</sup>

### *The Application Process*

Despite the recent addition of *inter partes* appeals,<sup>63</sup> the patenting process is still primarily an *ex parte* endeavor in the U.S., with the Patent Office on the one side and the inventor on the other.<sup>64</sup> In Europe, anyone can oppose a pending patent. Such opposition is handled by the Patent Office's Opposition Division, whose decisions can be appealed to the Board of Appeal.<sup>65</sup> This process helps the Patent Office discovering prior art, working against inventors who would prefer to hide work from the examiner that could endanger the patentability of her invention<sup>66</sup> (behavior that is countered by the duty to candor in the U.S.<sup>67</sup>). Since competitors

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<sup>58</sup> State St. Bank & Trust Co. v. Signature Fin. Group, 149 F.3d 1368, 1373-77 (Fed. Cir. 1998).

<sup>59</sup> 35 U.S.C. § 101 (“*whoever invents . . .* may obtain a patent.” (emphasis added)).

<sup>60</sup> See e.g. Sean T. Carnathan, *Patent Priority Disputes—A Proposed Re-Definition of “First-to-Invent,”* 49 ALA. L. REV. 755 (1998) (discussing the first-to-invent rule, its benefits and shortcomings).

<sup>61</sup> See E.P.C. § 60(2), available at <http://www.european-patent-office.org/legal/epc/e/ar60.html>.

<sup>62</sup> See Peter A. Jackman, *Adoption Of A First-To-File Patent System: A Proposal*, 26 U. BALT. L. REV. 67, 83-86 (1997) (discussing these and other advantages of the first-to-file system).

<sup>63</sup> 35 U.S.C. §§ 311-18.

<sup>64</sup> See *id.* §§ 131-35.

<sup>65</sup> E.P.C. §§ 99-112, available at <http://www.european-patent-office.org/legal/epc/e/ma1.html>.

<sup>66</sup> See e.g. Stuart J. H. Graham et al., *Post-Issue Patent “Quality Control”: A Comparative Study of US Patent Re-examinations and European Patent Oppositions*, NATIONAL BUREAU OF



already had their chance to invalidate, a European patent carries a higher presumption of validity than a U.S. patent. Applying for a patent in Europe also automatically entails publication of the invention.<sup>68</sup> This is not necessarily true in the U.S.<sup>69</sup>

### *The Best Mode Dilemma*

The lack of a best mode requirement in Europe<sup>70</sup> can lead to problematic situations for European inventors, who want to extend their rights across the ocean. Failure to include the non-mandatory best mode in the description of the European patent application may lead to loss of patentability in the U.S.:

The *Paris Convention* provides that “[a]ny person who has duly filed an application for a patent . . . shall enjoy, for the purpose of filing in the other countries, a right of priority.”<sup>71</sup> This priority treatment is available for a period of twelve months.<sup>72</sup> The patent is barred entirely in the U.S. twelve months after the foreign patent application has been submitted and the patent has been granted.<sup>73</sup>

The best mode requirement does not only apply to the later application in the U.S., however, but also to the original, foreign application.<sup>74</sup> Hence an inventor who has filed for a patent in Europe without describing the best mode may lose his chance to file for a patent for the same invention in the U.S. due to intermediate disclosure by another, which renders the invention obvious.<sup>75</sup>

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ECONOMIC RESEARCH, working paper no. w8807, 11 (Feb. 2002), *available at* <http://emlab.berkeley.edu/users/bhhall/bhpapers.html>.

<sup>67</sup> See *Hoffman-La Roche, Inc. v. Lemmon Co.*, 906 F.2d 684, 687 (Fed. Cir. 1990).

<sup>68</sup> E.P.C. § 93, *available at* <http://www.european-patent-office.org/legal/epc/e/ar93.html>.

<sup>69</sup> 35 U.S.C. § 122(a).

<sup>70</sup> The written description in U.S. patent applications must both “enable any person skilled in the art . . . to make and use the [invention]” and “set forth the best mode . . . of [the] invention.” See *id.* § 112. These requirements are known as the enablement clause and the best mode requirement, respectively. Europe only requires the former. See E.P.C. § 83, *available at* <http://www.european-patent-office.org/legal/epc/e/ar83.html>.

<sup>71</sup> Paris Convention, § 4(A)(1); 35 U.S.C. § 119.

<sup>72</sup> *Id.* § 4(C)(1).

<sup>73</sup> 35 U.S.C. § 102(b), 119(a).

<sup>74</sup> See *In re Gosteli*, 872 F.2d 1008, 1010 (Fed. Cir. 1989).

<sup>75</sup> See *Id.*; see also Albert L. Jacobs, Jr., *The Best Mode Requirement: What The Law Is And What It Should Be*, 16 HOUS. J. INT’L L. 533, 540-45 (1994).

### *Term of Protection*

Under the TRIPS agreement, the patent term is twenty years from the filing date<sup>76</sup> both in the United States<sup>77</sup> and Europe.<sup>78</sup> The United States has adjusted the term in compliance with the TRIPS agreement from formerly seventeen years from the date of grant.<sup>79</sup> In Europe, the filing date already functioned as the priority date, with terms differing from country to country. Germany, for example, used to have an eighteen-year term<sup>80</sup> while in the United Kingdom it was sixteen years.<sup>81</sup>

### *Duty to License*

No duty to license exists in the U.S. The exercise of a patent monopoly is only limited by antitrust laws.<sup>82</sup> In Europe, national laws apply: A European patent is more like a bundle of patents, one for each country, rather than a single overarching patent. In fact, grantors are required to file applications with the patent office of every member country where protection is sought; those offices simply cannot deny a patent anymore after the EPO has granted it.<sup>83</sup> Still, each country will subject the patent to its own national laws.<sup>84</sup>

At least some European countries such as the UK,<sup>85</sup> France,<sup>86</sup> and Germany<sup>87</sup> have compulsory license statutes. All of these countries - as well as the European Community - also have antitrust statutes, which may impose additional limits on the patent monopoly.<sup>88</sup>

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<sup>76</sup> TRIPS § 33, available at [http://www.wto.org/english/docs\\_e/legal\\_e/27-trips\\_01\\_e.htm](http://www.wto.org/english/docs_e/legal_e/27-trips_01_e.htm).

<sup>77</sup> 35 U.S.C. § 154(2).

<sup>78</sup> E.P.C. § 63(1), available at <http://www.european-patent-office.org/legal/epc/e/ar63.html>.

<sup>79</sup> Uruguay Round Agreements Act [URAA], Pub. L. No. 103-465 (1994), § 532(a)(1) (amending 35 U.S.C. § 154 to include the new patent term).

<sup>80</sup> See Deutsches Patent und Markenamt [German Patent and Trademark Office], Kostenmerkblatt [Fee Guide], Jan. 2000, 2 n.2, available at [http://www.uni-magdeburg.de/pat/jur/doc/dpam\\_kostenmerkblatt.doc](http://www.uni-magdeburg.de/pat/jur/doc/dpam_kostenmerkblatt.doc).

<sup>81</sup> Patents Act of 1949, § 22, available at <http://www.jenkins-ip.com/patlaw/pa49.htm>.

<sup>82</sup> Walker Process Equip., Inc. v. Food Mach. & Chem. Corp., 382 U.S. 172, 179 (1965); see also Sherman Act of 1890, 15 U.S.C. §§ 1-7 (2000); Clayton Act of 1914, 15 U.S.C. §§ 12-27.

<sup>83</sup> See E.P.C. § 65, available at <http://www.european-patent-office.org/legal/epc/e/ar65.html>.

<sup>84</sup> See *id.* § 2(2), available at <http://www.european-patent-office.org/legal/epc/e/ar2.html>; § 64(1), available at <http://www.european-patent-office.org/legal/epc/e/ar64.html>.

<sup>85</sup> Patent Act of 1977, § 48, available at <http://www.jenkins-ip.com/patlaw/index.htm>.

<sup>86</sup> Code de la Propriete Intellectuelle [Intellectual Property Code], § L.613-12 (1996), available at <http://www.legifrance.gouv.fr/WAspad/RechercheSimpleCode>.

<sup>87</sup> Patentgesetz [PatG] [Patent Law] § 24, available at [http://bundesrecht.juris.de/bundesrecht/patg/\\_24.html](http://bundesrecht.juris.de/bundesrecht/patg/_24.html).

<sup>88</sup> For the European Community, see E.C.T. §§ 81-86, available at <http://www.europa.eu.int/comm/competition/antitrust/legislation/>; for the United Kingdom, see Competition Act 1998, available at <http://www.hmso.gov.uk/acts/acts1998/19980041.htm>; for France, see Code de Commerce [Commercial Code] §§ L.461-1 – L.464-8, available at

## Conclusion

International efforts have been largely successful in creating a level playing field between the U.S. and Europe. While some differences in the application process and the granted rights remain, patentability is nearly uniform. Inventions in traditional fields such as mechanical engineering (like the intellectual property professors' favorite example; the plow) do not seem to face discrimination on either continent.

Even modern technologies such as software are subject to widely unified treatment. Only when it comes to the very cutting-edge of the latest, controversial decisions can differences be discovered; most notable is the holding in *State Street* as opposed to that in *Pension Benefits*. However, the trend of limiting *State Street's* broad holding has started in the U.S.,<sup>89</sup> while Europe can be expected to move towards *State Street* at the same time—probably leading to little practical difference soon. Such harmony is desired; some judges have no problem revealing international reconciliation as a cherished goal and a factor in their decisions.<sup>90</sup>

As a final observation, it should be noted that the trend in favor of patentability, started in the U.S. in part via of the instantiation of the Court of Appeals for the Federal Circuit,<sup>91</sup> appears to continue. European Judge Steinbrener, who wrote that “it is legitimate to have a mix of technical and ‘non-technical’ features (i.e. features relating to non-inventions within the meaning of [§] 52(2) E.P.C.) appearing in a claim, even if the non-technical features should form a dominating part,”<sup>92</sup> and his American colleague Judge Clevenger, stating that “[t]oday . . . virtually anything is patentable,”<sup>93</sup> seem to agree.

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<http://www.legifrance.gouv.fr/>; for Germany, see Gesetz gegen Wettbewerbsbeschränkungen [GWB] [Law against Competition Restraints], available at <http://www.bundeskartellamt.de/kartellgesetz.html>.

<sup>89</sup> See *WMS Gaming, Inc. v. Int'l Game Tech.*, 184 F.3d 1339, 1348-49 (Fed. Cir. 1999).

<sup>90</sup> See e.g. *In re Koninklijke Philips Elec.*, no. T 1194/97, slip op. at 11 (Tech. Bd. App. March 15, 2000) (considering USPTO criteria while noting that all contracting states of the E.P.C. are member states of the WTO and the harmonizing effect of the TRIPS agreement should therefore be taken into consideration by the EPO), available at <http://legal.european-patent-office.org/dg3/biblio/t971194ex1.htm>.

<sup>91</sup> An Act To establish a United States Court of Appeals for the Federal Circuit, to establish a United States Claims Court, and for other purposes, Pub. L. No. 97-164 (1982).

<sup>92</sup> *DeTeMobil Deutsche Telekom MobilNet GmbH et al. v. Comvik GSM AB*, no. T 0641/00, slip op. at 5-6 (Tech. Bd. App. Sept. 26, 2002), available at <http://legal.european-patent-office.org/dg3/biblio/t000641ex1.htm>.

<sup>93</sup> *Hughes Aircraft Co. v. United States*, 148 F.3d 1384, 1385 (Fed. Cir. 1998) (Clevenger, J., dissenting).