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## **FALLING THROUGH THE CRACKS: THE PROBLEM OF GRANTING SOFTWARE PATENTS**

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### **Abstract**

There has been much discussion generated by the open source community with respect to patents. Specifically, the granting of software patents in the US has morphed into a strained and uncontrollable system due to the sheer volume of software patent applications it receives. It has been suggested that software patents are being granted without closer examination as to whether applications meet all of the necessary criteria. This has caused a major rift between software patent owners and the open source community, primarily as a result of software patent owners being granted their patents for claims that technically should be open and free to use in the open source community. The software patents that are being granted fall through the cracks of a patent system that has impacted on the Internet and software space. There have been numerous attempts to redress the imbalance of power that lies with the patent owner by various organisations, one being the Electronic Frontier Foundation (EFF). The EFF established 'The Patent Busting Project' in order to combat the validity of software patents that ought to be invalid due to the existence (although mostly undocumented) of prior art in the information and communications technology (ICT) industry. Whether the project has been effective in challenging the validity of software patents is presently uncertain. This paper will discuss and evaluate whether the EFF Patent Busting Project is an effective tool in addressing the conflicts that arise within the patent arena and open source licensing.

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## 1. Introduction

The granting of software patents has increased considerably since the evolution of the Internet and technology. This has translated into a significant shift in the way that innovation has been fostered. There is much debate over whether software patents qualify or ought to qualify as “patents” under the US Patent Code. Early cases such as *Diamond v Diehr*,<sup>1</sup> *Gottschalk v Benson*,<sup>2</sup> *Parker v Flook*,<sup>3</sup> *Re Alapat*,<sup>4</sup> *State Street*,<sup>5</sup> and more recently *In Re Bilski*,<sup>6</sup> demonstrate the difficulty the courts have had with the changing face of technology and ICT related technology patents.<sup>7</sup> Consequently, this has resulted in the technology industry being held captive by “patent” owners asserting rights over patents that belong to the technology community at large for licensing fees, royalties and other income generating tactics for exploiting patent innovation.<sup>8</sup> The tensions are further intensified as technology companies, innovators, programmers, coders and the actors that comprise the technology industry are in a state of alert where a patent owner can materialise out of nowhere and assert that the technology being used is protected and owned by them and demand license fees, and/or royalty fees.<sup>9</sup> It is common knowledge that patent litigation is extremely costly, and it is potentially crippling for small or medium-sized enterprises to defend

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<sup>1</sup> *Diamond v Diehr*, 450 U.S. 175 (1981).

<sup>2</sup> *Gottschalk v Benson*, 409 U.S. 63 (1972).

<sup>3</sup> *Parker v Flook*, 437 US 584 (1978).

<sup>4</sup> *Parker v Flook*, 33 F.3d 1526.

<sup>5</sup> *State Street* 149 F.3d 1368 (Federal Circuit 1998).

<sup>6</sup> *In re Bilski*, 545 F.3d 943, 88 U.S.P.Q.2d 1385 (Fed. Cir. 2008).

<sup>7</sup> This includes software patents.

<sup>8</sup> There has been a recent increase since software proliferation occurred in the mid 1990s. See generally J R Allison, M A, Lemley, A Walker, “Extreme Value or Trolls on Top? The Characteristics of the Most-Litigated Patents” (2009) *University of Pennsylvania Law Review* 1-37; J Bessen, R M Hunt, “An Empirical Look at Software Patents” (2004) Working Paper No 03-17/R 2004. See further, J E Cohen, M A Lemley, “Patent Scope and Innovation in the Software Industry” (2001) *California Law Review* 1-58; J R Allison, R J Mann, “The Disputed Quality of Software Patents” (2007-2008) *Washington University Law Review* 297-342; D Schumann, “Obviousness with Business Methods” (2001-2002) *University of Miami Law Review* 727-772.

<sup>9</sup> Since major decisions such as *State Street*, software patents increased significantly according to statistics. See, J R Allison, A Dunn, and R J Mann, “Symposium Software Patents, Incumbents, and Entry” (2007) *Texas Law Review* 1579-1625; M Campbell-Kelly, P Valduriez, “A Technical Critique of Fifty Software Patents” (2005) *Marquette Intellectual Property Law Review* 249-305; J Bessen, R M Hunt, see note 9 above; M Bagley, “Patents and Technology Commercialization: Issues and Opportunities”, in D Gary, C Libecap, M C Thursby (eds) *Technological Innovation: Generating Economic Results. Advances in the Study of Entrepreneurship, Innovation and Economic Growth*, (Bingley: JAI Press Inc., 2008) at vol 18, ch 4, 117-147; D L Burk, and M A Lemley, “Policy Levers in Patent Law” (2003) *Virginia Law Review* 1575-1696; F M Scherer, “The Political Economy of Patent Policy Reform in the United States” (2009) *Journal on Telecommunications and High Technology Law* 167-216; C Shapiro, “Injunctions, Hold-Up, and Patent Royalties”, available at <http://faculty.berekeley.edu/shapiro/royalties> (accessed 23 March 2010); M A Lemley, C Shapiro, “Probalistic Patents” (2005) *Journal of Economic Perspectives* 75-98; A Chuang, “Fixing the Failures of Software Patent Protection: Deterring Patent Trolling By Applying Industry Specific Patentability Standards” (2006) *Southern California Interdisciplinary Law Journal* 215-237.

themselves against illegitimate “patent owners” results in increasing the power imbalance that is perpetuated by a deficient patent system.<sup>10</sup> This paper highlights the problems associated with software patents and the risks posed to open source, and examines the effectiveness of the Patent Busting attempt by EFF to redress these issues.

## 2. Community Efforts to Challenge Software Patents

Attempts to establish community-based projects prior to the Electronic Frontier Foundations include BountyQuest and Peer2Patent.<sup>11</sup> The effectiveness of community organisational projects in overcoming the increasing problem of grants of software patents remains presently unclear. It is concerning for all actors in the ICT industry to innovate in an industry that is fraught with claims of technologies that are protected by patents. While there are legitimate patents within the ICT area, software patents are being granted readily without close examination as to whether they meet the threshold requirements for a valid grant of patent. The speed at which technology is advancing complicates the law, which is entrenched in traditional notions of statutes and precedent. The aim of the Patent Busting Project of EFF is to target and challenge software patents, with a view to invalidating those that have been illegitimately granted. The Project was established in 2004 in order to combat invalid and illegitimate patents.<sup>12</sup> The EFF states “unlike most technologies, software and the Internet have attracted a vast number of small business, non-profit, and individual users - each of whom has adopted and built upon these resources as part of their daily interaction with computers and the online world.”<sup>13</sup>

## 3. The impact of the project

The Internet has increasingly changed the way in which users communicate online and how they use various resources in order to communicate. An example of this is

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<sup>10</sup> See generally, M A Lemley, C Shapiro, “Patent Hold Up and Royalty Stacking” (2007) *Texas Law Review*, 1991-2049; D W Opderbeck, “Patent Damages Reforms and the Shape of Patent Law” (2009) *Boston University Law Review* 127-187; B L Smith, S O Mann, “Innovation and Intellectual Property Protection in the Software Industry: An Emerging Role for Patents?” (2004) *University of Chicago Law Review* 241-264; M Reitzig, J Henkel, C Heath, “On Sharks, Trolls and Their Patent Prey-Unrealistic Damage Awards and Firms’ Strategies of ‘Being Infringed’” (2007) *Research Policy* 134-154; J R Allison, A Dunn, R J Mann R J, see note 10 above; G H Gardella, E A Berger, “United States Reexamination Procedures: Recent Trends, Strategies and Impact on Patent Practice” (2009) *John Marshall Review of Intellectual Property Law* 381-411, at 389; D Durie, M A Lemley, “A Realistic Approach to the Obviousness of Inventions” *Stanford Public Law and Legal Theory Working Paper Series* available at <http://ssrn.com/abstract=1133169> (accessed 23 March 2010); G R Vetter, “Open Source Licensing and Scattering Opportunism in Software Standards” (2007) *Boston College Law Review* 225-250; R C Dreyfus, “Non Obviousness: A Comment on Three Learned Papers” (2008) *Lewis & Clark Law Review* 431-441; J L Reed, “The Status Quo Between Patent Applicant and Examiner May Soon Change: The Proposed Rules Affecting Consideration of Prior Art by the US Patent Office,” 2008 *Federal Circuit Bar Journal* 31-52; J Farrell, C Shapiro, “How Strong Are Weak Patents” (2008) *American Economic Review* 1347-1369; S W Graf, “Improving Patent Quality Through Identification of Relevant Prior Art: Approaches to Increase Information Flow to The Patent Office” (2007) *Lewis & Clark Law Review* 495-520.

<sup>11</sup> See <http://newsbreaks.infotoday.com/NewsBreaks/BountyQuest-Revisited-The-Coin-Has-Two-Sides-17623.asp> (accessed 29 January 2010).

<sup>12</sup> See EFF, note 1 above. See also <http://www.eff.org/issues/patents> (accessed 25 October 2008).

<sup>13</sup> *Ibid.*

that the average user utilises technology from “open source programming to online journaling to political campaigning the average citizen is using new technology online and on her desktop as often as any traditional company.”<sup>14</sup> Users of the digital community are diverse; from the individual user to the small business owner, to the software developer, there are hundreds of different types of users who interact in the Internet space.<sup>15</sup> Most will at one time or another use the technology that is available in the digital environment<sup>16</sup> and those who do so will be potentially liable for patent infringement. Contrary to the intentions of the open source movement, which created a space in which members of that community can exchange and use the created technology by adhering to the certain conditions, it is now not enough that users adhere to these “conditions” when using open source technology - users are in a precarious position without many defenses available to them.<sup>17</sup> The ethos of the open source community, in which users may use and develop open source technologies, highlights the potentially precarious legal position of users and developers of “new” technologies (or what they deem to be “new”) in which they might find themselves open to litigation suits for patent infringement.<sup>18</sup> It has been suggested, however, that although patent holders used to target competing companies, these firms now have legal departments to defend against illegitimate patent threats.<sup>19</sup>

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<sup>14</sup> See EFF, see note 1 above.

<sup>15</sup> See generally, J R Allison, A Dunn, R J Mann, see note 10 above; EFF, see note 1 above; J Bessen, R M Hunt, see note 9 above; J E Cohen, M A Lemley see note 9 above; J R Allison, R J Mann, see note 9 above; R E Thomas, “Debugging Software Patents: Increasing Innovation and Reducing Uncertainty in the Judicial Reform of Software Patent Law” (2008) *Santa Clara Computer and High Technology Law Journal* 191-241; G R Vetter, see note 11 above; R C Dreyfus, see note 11 above; J L Reed, see note 11 above; J Farrell, C Shapiro C, see note 11 above; S W Graf, see note 11 above.

<sup>16</sup> See EFF, see note 1 above; B L Smith, S O Mann, see note 11 above; J C Fromer, “The Layers of Obviousness in Patent Law” (2008) *Harvard Journal of Law and Technology* 75-102; S J H Graham, R P Merges, P Samuelson, T Sichelman, “High Technology Entrepreneurs and the Patent System: Results of the 2008 Berkely Patent Survey”, available at <http://ssrn.com/abstract=1429049> (accessed 23 March 2010); J R Allison, M A Lemley, A Walker, see note 9 above; R E Thomas, see note 16 above.

<sup>17</sup> See generally B Perens, “The Problem of Software Patents in Standards” available at <http://perens.com/works/articles/PatentFarming.html> (accessed 23 March 2010), and M A Lemley, C Shapiro, see note 10 above; D Myers, see note 18 above; A Chuang, see note 10 above; EFF, see note 1 above; see also <http://www.eff.org/issues/patents> (accessed 25 October 2008).

<sup>18</sup> See generally, J Rantanen, “Slaying the Troll: Litigation As An Effective Strategy Against Patent Threats” (2006-2007) *Santa Clara Computer and High Technology Law Journal* 159-210; S E Abraham, “Software Patents in the United States: A Balanced Approach” (2009) *Computer Law and Security Review* 554-562; K D Rowe, “Why Pay for What’s Free?: Minimising the Patent Threat to Free and Open Source Software” (2008) *John Marshall Review of Intellectual Property* 595-620; A Tindell, “Towards a More Reliable Fact-Finder in Patent Litigation” (2009) *Marquette Intellectual Property Law Review* 309-330; J M Golden, “Patent Trolls and Patent Remedies” (2006-2007) *Texas Law Review* 2111-2162; S M McJohn, “Scary Patents” (2009) *Legal Studies Research Paper Series* Research Paper 09-29, available at <http://ssrn.com/abstract=1413781> (accessed 23 March 2010); G R Vetter, see note 11 above; R C Dreyfus, see note 11 above; J L Reed, see note 11 above; J Farrell, C Shapiro, see note 11 above; S W Graf, see note 11 above.

<sup>19</sup> See M Reitzig, J Henkel, C Heath, see note 11 above; B Perens, see note 18 above; EFF, see note 1 above; D Schumann, see note 9 above; J C Fromer, see note 17 above; D S Evans, A Layne-Farrar, “Software Patents and Open Source: The Battle Over Intellectual Property Rights” (2004) *Virginia Journal of Law and Technology* 1-28; S J H Graham, R P Merges, P Samuelson, T Sichelman, see note 17 above; C V Chien, “Of Trolls, Davids, Goliaths and Kings: Narratives and Evidence in the Litigation of High-Tech Patents” *Santa Clara University Legal Studies* Research Paper No. 09-13,

There has been increasing concern that patent owners may have started to target technology users, small businesses, or individuals who do not have the financial means to pay for lawyers and legal fees.<sup>20</sup> This is known as ransoming the patented technology for royalties and licence fees.<sup>21</sup> An example of “ransoming” would be a situation in which a patented but unutilised technology is patented by the holder is used, developed or exploited - with potential commercial benefit - by an alleged infringer who is unaware of the patent; the patent holder then surfaces asking for royalties and license fees.<sup>22</sup> Non-patent holders in this situation have limited rights and few avenues of legal recourse. The position of the patent holder is far stronger because they have the legal right to enforce the patent against infringement; conversely the other party must then defend against litigation which may be more expensive than paying licence fees or royalties.<sup>23</sup> Many commentators assert that ransoming for royalties and license fees demonstrates the power imbalance between the “patent owners” and users of the technology because the threat of litigation is imminent and financially devastating for small or medium-sized enterprises, developers and programmers.<sup>24</sup> This is a recurring theme, because if users “are faced with million-dollar legal demands, they have no choice but to capitulate and pay licenses fees - fees that often fund more threat letters and lawsuits.”<sup>25</sup> EFF asserts that:

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available at [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1396319##](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1396319##); see note 13 above; see also <http://www.eff.org/press/mentions/2007/11/18>, see further <http://www.eweek.com/c/a/Enterprise-Applications/The-Patent-Puzzle/>.

<sup>20</sup> This is also known as Patent Trolling, see generally; A Chuang, see note 10 above; D Myers, see note 18 above; J R Allison, M A Lemley, A Walker, see note 9 above; B Perens, see note 18 above; EFF, see note 1 above; C V Chien, see note 20 above; J Rantanen, see note 19 above; P S Abril, R Plant, “The Patent Holder’s Dilemma: Buy Sell or Troll?” (2007) *Communications of the ACM* 36-44; B Silver, “Controlling Patent Trolling with Civil RICO” (2009) *Yale Journal Law and Technology* 70-95.

<sup>21</sup> See further B Perens, see note 18 above; see also J E Cohen M A Lemley, see note 9 above; see also B Perens, “Software Patents vs Free Software”, available at <http://perens.com/Articles/Patents.html> (accessed 13 March 2010); S J H Graham, R P Merges, P Samuelson, T Sichelman, see note 17 above; C V Chien, see note 20 above.

<sup>22</sup> See generally J R Allison, M A Lemley, J Walker, “Extreme Value or Trolls on Top? The Characteristics of the Most- Litigated Patents” (2009) *University of Pennsylvania Law Review* 1-38; S K Shrestha, “Trolls or Market-Makers? An Empirical Analysis of Non Practicing Entities” (2010) *Columbia Law Review* 114-160; C Shapiro, see note 10 above; G N Magliocca “Blackberries and Barnyards: Patent Trolls and The Perils of Innovation” (2006-2007) *Notre Dame Law Review* 1809-1838; R M Whitmeyer, “A Plea for Due Processes: Defining the Proper Scope of Patent Protection for Computer Software” (1991) *Northwestern University Law Review* 1103-1138; D Myers, see note 18 above; A Chuang, see note 10 above; G H Gardella, E A Berger, see note 11 above; W C Rooklidge, A G Barker, see note 10 above; D W Operbeck, see note 11 above; J Bessen, R M Hunt, see note 9 above.

<sup>23</sup> See generally J M Golden, see note 19 above; S M McJohn, see note 19 above; D Myers, see note 18 above; A Chuang see note 10 above; G H Gardella, E A Berger, see note 11 above; J Bessen, R M Hunt, see note 9 above; G R Vetter, see note 11 above; R C Dreyfus, see note 11 above; J L Reed, see note 11 above; J Farrell, C Shapiro, see note 11 above; S W Graf, see note 11 above.

<sup>24</sup> See further M A Lemley, C Shapiro, see note 10 above; R E Thomas, see note 16 above; D S Evans, A Layne-Farrar, see note 20 above.

<sup>25</sup> See EFF, see note 1 above; other commentators B Kahin, “Patents for All: The System That Could Not Contain Itself”, available at <http://www.huffingtonpost.com/brian-kahin/patents-for-all-the->

[B]ecause these patents have become cheaper and easier to obtain, the patentee's costs can be spread out quickly amongst the many new defendants. Our patent system has historically relied on the resources of major corporate players to defeat bad patents; now it leaves these new defendants with few if any options to defend themselves.<sup>26</sup>

One of the central problems with software patents is simply the increasing volume of applications, which has strained the US Patent and Trademark Office. The strain results in a failure to examine patent applications stringently and increases the granting of software patents, which demonstrates a broken system.<sup>27</sup> The US patent system has been criticised widely for allowing patents to be granted for software technology used within the Internet and technology community.<sup>28</sup> One of the earlier cases in the United States that examined the issue of software patents is the case of *Diamond v Diehr*, where the Supreme Court was reluctant to provide patent coverage for software.<sup>29</sup> It has been a primary task of the US Court of Appeal Federal Circuit to address the issues that have arisen out of conflicts over the recognition of software patents.<sup>30</sup>

In *Diamond v Diehr*,<sup>31</sup> the court asserted that a mathematical algorithm when considered in its entirety could be a patentable invention because of the ability of the "process claims containing software to transform or reduce an article to a different state or thing."<sup>32</sup> However, whether computer software could be patentable subject matter under US legislation was first examined in *Gottschalk v Benson*.<sup>33</sup> In that case the Supreme Court rejected the claim in dispute, that a "device independent method for converting binary-coded decimal (BCD) numbers into pure binary numerals" was

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syste\_b\_106313.html (accessed 23 March 2010); B Perens, see note 18 above; see also J E Cohen, M A Lemley, see note 9 above; J M Golden, see note 19 above; S M McJohn, see note 19 above; D Myers, see note 18 above; A Chuang, see note 10 above; G H Gardella, E A Berger, see note 11 above; J Bessen, R M Hunt, see note 9 above; B Perens, see note 22 above; D S Evans, A Layne-Farrar, see note 20 above.

<sup>26</sup> See EFF, see note 1 above. See also <http://www.eff.org/related/5460/blog> (accessed 25 October 2009).

<sup>27</sup> See G H Gardella, E A Berger, see note 11 above; see further R E Thomas, "Debugging Software Patents: Increasing Innovation and Reducing Uncertainty in the Judicial Reform of Software Patents" (2008-2009) *Santa Clara Computer and High Technology Law Journal* 191-242, at 193; G R Vetter, see note 11 above; R C Dreyfus, see note 11 above; J L Reed, see note 11 above; J Farrell, C Shapiro, see note 11 above; S W Graf, see note 11 above; J R Allison, M A Lemley, A Walker, see note 9 above; C Shapiro, see note 10 above; J M Golden, see note 19 above; G N Magliocca, see note 23 above; R M Whitmeyer, see note 23 above; M A Lemley, C Shapiro, see note 10 above; D Myers, see note 18 above; A Chuang, see note 10 above; G H Gardella, E A Berger, see note 11 above; D Durie, M A Lemley, see note 11 above; G C Yang, "The Continuing Debate of Software Patents and Open Source Movement" (2005) *Texas Intellectual Property Law Journal* 171-208.

<sup>28</sup> See EFF, see note 1 above.

<sup>29</sup> See further *Diamond v Diehr* 450 U.S. 175 (1981). See also R E Thomas, see note 28 above.

<sup>30</sup> R E Thomas, see note 28 above.

<sup>31</sup> *Diamond v Diehr* 409 U.S. 63 (1972).

<sup>32</sup> *Ibid.*

<sup>33</sup> *Ibid.*

patentable subject matter.<sup>34</sup> Significantly, the decision in *Gottschalk v Benson*<sup>35</sup> had declared that mathematical algorithms were not patentable subject matter by the Supreme Court, which set the precedent throughout the 1970's.<sup>36</sup>

This decision set the precedent for rejecting software patent applications on the basis that software was merely a string of unpatentable algorithms.<sup>37</sup> The *Benson* decision shifted the focus away from patenting software to the more technical devices and processes that related to mechanical subject matter, which included computer programs.<sup>38</sup> Interestingly, in *Parker v Flook*<sup>39</sup> the court examined whether to patent a computerised method for consecutively recalculating the “alarm limit” during a chemical conversion process where it highlighted that the only novel step of the invention was a computer program and that the program alone did not invoke the ambit of patentable subject matter.<sup>40</sup> Significantly, the Court noted that the invention did not meet the new or inventive requirement without the mathematical algorithm of the computer program (which developed the update for the alarm limit).<sup>41</sup> Subsequently this view was not sustained by the Court in *Diamond v Diehr*<sup>42</sup> where it held that a “process for continuously monitoring the temperature inside a synthetic rubber mold using a computer and the well known Arrhenius equations for measuring cure time as a function of temperature and other variables was patentable subject matter.”<sup>43</sup> The Court reasoned that there was greater “post-solution activity” outside of the computer program.<sup>44</sup> The distinction between *Diehr* and *Flook* is difficult to ascertain other than in regard to the written claims for specific uses, but scholars have suggested that the decision in *Diehr* coined the phrase “the doctrine of the magic words.”<sup>45</sup> According to this doctrine software was patentable subject matter only if the language was constructed in a manner that suggested that the software inventions were as “hardware devices, pizza ovens, and other machines.”<sup>46</sup> Some scholars suggest that a claim stating a mathematical or mental process would be sufficient to satisfy the physical element and inventive step for a patent regardless of whether the physical element or inventive step was known or an industry standard and the novel

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<sup>34</sup> *Ibid.*, at 73. See further R E Thomas, see note 28 above, at 193.

<sup>35</sup> *Diamond v Diehr*, 409 U.S 63 (1972).

<sup>36</sup> See further J E Cohen, M A Lemley, see note 9 above.

<sup>37</sup> See P Samuelson, “Benson Revisited: The Case Against Patent Protection for Algorithms and Other Computer Program Related Inventions” (1990) *Emory Law Journal* 1025-1154; J E Cohen, M A Lemley, see note 9 above.

<sup>38</sup> *Ibid.*

<sup>39</sup> *Parker v Flook* 437 US 584 (1978) See J E Cohen, M A Lemley, see note 9 above, at 9.

<sup>40</sup> *Ibid.*

<sup>41</sup> *Ibid.*

<sup>42</sup> *Diamond v Diehr* 409 U.S 63 (1972) See further J E Cohen, M A Lemley, see note 9 above, at 9.

<sup>43</sup> J E Cohen, M A Lemley, see note 9 above, at 9. See further *Diamond v Diehr* 450 US 17 (1981).

<sup>44</sup> J E Cohen, M A Lemley, see note 9 above, at 9. See further *Diamond v Diehr* 450 US 17 (1981) at 215.

<sup>45</sup> J E Cohen, M A Lemley, see note 9 above, at 9; R E Thomas, see note 28 above.

<sup>46</sup> *Ibid.*



aspect was the mathematical algorithm.<sup>47</sup> It can be argued that *Diamond v Diehr* paved the way for software patent application and the protection of software patents.<sup>48</sup>

Another major decision came from the en banc Federal Circuit in 1994, which was the *In re Alappat*<sup>49</sup> which cemented software patent protection.<sup>50</sup> *In re Alappat* it was established by the Court that “otherwise statutory process or apparatus” requirement could be satisfied by simple drafting claims which included a general purpose computer or standard hardware (or related) element necessary for the application of the algorithm.<sup>51</sup> The reasoning of the Court was that “a general purpose computer in effect becomes a special purpose computer once it is programmed to perform particular functions pursuant to instructions from program software.”<sup>52</sup> Following *Alappat*, a series of cases including *Street State Bank & Trust v Signature Financial Group*<sup>53</sup> destroyed any remaining barriers to software patents by the reversal of an earlier decision of the District Court in regard to a “software-implemented financial system that automatically calculated profits from a joint stock account.”<sup>54</sup> In *State Street* the court rejected the idea that the existing test of “otherwise statutory process or apparatus”<sup>55</sup> had “little, if any applicability to determining the presence of statutory subject matter.”<sup>56</sup> Essentially the reasoning of the Court was that as long the process or idea was “useful”, a physical structure was not required.<sup>57</sup> *State Street* introduced the test of “useful, concrete, and tangible” which was affirmed in *AT & T v Excel Communications*.<sup>58</sup> The decision also asserted that it was not necessary that a claim for software patent must have physicality associated with it.<sup>59</sup>

Significantly, the decision of *State Street* facilitated liberality in the granting of software patents because there was no strict requirement of physical structure

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<sup>47</sup> J E Cohen, M A Lemley, see note 9 above, at 9 which discusses the test derived from further *Diamond v Diehr* 450 US 17 (1981), and examined the test from the following three cases in the court of appeal: *In Re Freeman*, 573 F.2d 1237 (C.C.P.A 1978); *In Re Walter* 618 F.2d 758 (C.C.P.A 1980); *In Re Abele* 684 F.2d 902 (C.C.P.A. 1982); R. E Thomas, see note 28 above; J Farrell, C Shapiro, see note 11 above; S W Graf, see note 11 above; D Lichtman, M A Lemley, “Rethinking Patent Law’s Presumption of Validity” (2008) *Stanford Law Review* 45-72.

<sup>48</sup> J E Cohen, M A Lemley, see note 9 above, at 9; J Farrell, C Shapiro, see note 11 above; S W Graf, see note 11 above; D Lichtman, M A Lemley, see note 48 above.

<sup>49</sup> *In re Alappat*, 33 F.3d 1526 (Federal Circuit 1994 en banc).

<sup>50</sup> *In re Alappat*, 33 F.3d 1526 (Federal Circuit 1994 en banc); J E Cohen, M A Lemley, see note 9 above, at 9.

<sup>51</sup> *Ibid.*

<sup>52</sup> *In re Alappat* 33 F.3d 1526 (Federal Circuit 1994 en banc) at 1545; J E Cohen, M A Lemley, see note 9 above, at 9; D S Evans, A Layne-Farrar, see note 20 above.

<sup>53</sup> *Street State Bank & Trust v Signature Financial Group* 149 F.3d 1368 (Federal Circuit 1998).

<sup>54</sup> J E Cohen, M A Lemley, see note 9 above, at 9.

<sup>55</sup> *Ibid.*; D S Evans, A Layne-Farrar, see note 20 above.

<sup>56</sup> J E Cohen, M A Lemley, see note 9 above.

<sup>57</sup> *Ibid.*

<sup>58</sup> *AT & T v Excel Communications* 172 F.3d 1352 (Federal Circuit 1999), later holding the patent invalid pursuant to s102 *AT & T Corp v Excel Communications* 52 U.S.PQ 2d 1865 (D.Del 1999).

<sup>59</sup> J E Cohen, M A Lemley, see note 9 above; J Farrell, C Shapiro, see note 11 above; S W Graf, see note 11 above; D Lichtman, M A Lemley, see note 48 above.



associated with a software patent claim. In this respect, *State Street* “loosened” the reins on requirements for a grant of patent that may be satisfied superficially on the basis of the specification claims. Whereas previously *Benson* had asserted clearer criteria as to what would constitute a patent, more recent cases have broken down the boundaries of the law in relation to patentable subject matter. The impact of these decisions highlights the pitfalls of current patent practice, particularly the lack of close examination of the patent process in relation to software, where it is difficult to establish and search for software prior art. Some scholars have argued that “software patents have not been subject to the detailed examination for novelty and non-obviousness that they require.”<sup>60</sup>

This lack of consideration for the requirements of novelty and non-obviousness seems to be because of the lack of expertise in computer software or related areas.<sup>61</sup> Commentators argue that software patents were granted in numerous applications that fell short of meeting the tests of novelty and non-obviousness.<sup>62</sup> Similarly, searching for prior art in software is problematic because it often correlates to a search for the classification area that the software would be used in, as opposed to the specific software invention.<sup>63</sup> The issue of prior art for software is also difficult because, given the nature of the field, it has not been historically well documented; prior art in the software industry is not always described in journals, or publicly available sources where patent examiners can search for it. Instead, it is largely industry based where it exists in the source code.<sup>64</sup>

In the current digital environment where the ICT industry is constantly evolving and inventing, there is a division between open source code and patent ownership of “software”. This is especially troublesome when technology companies (or individuals) create new technologies while unaware that the new invention or creation is protected by a grant of patent. It may be difficult, therefore, to create new and innovative technologies that do not succumb to use of a patented technology. An example is the use of software and Internet technologies as tools of expression by people interacting in the digital environment<sup>65</sup> via eBay, blogging, Facebook, video and audio streaming technology, email, instant messaging and the like. One reason for this is that the patent process is long and extremely burdensome on the patent office, which is responsible for ascertaining whether the software patent application will be granted. Due to the surge of technology and grants of related patents, the application process becomes intricate and complex, and there is great difficulty in

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<sup>60</sup> J E Cohen, M A Lemley, see note 9 above; J Farrell, C Shapiro, see note 11 above; S W Graf, see note 11 above; D Lichtman, M A Lemley, see note 48 above D Lichtman, M A Lemley, see note 48 above.

<sup>61</sup> J E Cohen, M A Lemley, see note 9 above.

<sup>62</sup> See further generally J E Cohen, M A Lemley, see note 9 above; J Farrell, C Shapiro, see note 11 above; S W Graf, see note 11 above; D Lichtman, M A Lemley, see note 48 above.

<sup>63</sup> J E Cohen, M A Lemley, see note 9 above; M A Lemley, P Menell, R Merges, P Samuelson, *Software and Internet Law* (New York: Aspen Publishers, 2002); J Farrell, C Shapiro, see note 11 above; S W Graf, see note 11 above; D Lichtman, M A Lemley, see note 48 above.

<sup>64</sup> See further discussion J E Cohen, M A Lemley, see note 9 above; J Farrell, C Shapiro, see note 11 above; S W Graf, see note 11 above; D Lichtman, M A Lemley, see note 48 above.

<sup>65</sup> See EFF, see note 1 above.

searching for prior art, which is a lengthy exercise.<sup>66</sup> Arguably this causes uncertainty for users, because patents can exist anywhere within these technologies and there is no real way of knowing whether the technological tools are “subject to legal threats.”<sup>67</sup> Further, patent owners can monopolise and control these “technological means” by threatening other users, despite the tools being used in a non-commercial way.<sup>68</sup>

## 4. Challenging Patents

### 4.1. Patentable Subject Matter

The criteria for a grant of patent are prescribed by the US Patent Act title 35, s 101: “Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefore, subject to the conditions and requirements of this title.”<sup>69</sup> S. 101 imposes three threshold criteria: a work must be new, useful and non-obvious.<sup>70</sup> Further conditions and requirements are contained in ss 102 and 103.<sup>71</sup> S. 102 addresses novelty and loss of right to patent.<sup>72</sup> It also sets out several exceptions to patentability. A person shall, for example, be entitled to a patent *unless*:

- (a) the invention was known or used by others in this country, patented or described in a printed publication in this country or foreign country before the invention thereof by the applicant, or

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<sup>66</sup> J E Cohen, M A Lemley, see note 9 above; R J Mann, “Commercialising Open Source Software: Do Property Rights Still Matter?” (2007) *Harvard Journal of Law and Technology* 1-48; D L Burk, M A Lemley, “Is Patent Law Technology-Specific?” available at [http://ssrn.com/abstract\\_id=349761](http://ssrn.com/abstract_id=349761) (accessed 23 March 2010); M Risch, “Everything is Patentable” (2008) *Tennessee Law Review* 591-658; J Farrell, C Shapiro, see note 11 above; S W Graf, see note 11 above; D Lichtman, M A Lemley, see note 48 above.

<sup>67</sup> See EFF, see note 1 above.

<sup>68</sup> *Ibid.*

<sup>69</sup> See further *US Patent Reform Act 2009*, Title 35, s 101, available at [http://www.uspto.gov/web/offices/pac/mpep/documents/appxl\\_35\\_U\\_S\\_C\\_101.htm](http://www.uspto.gov/web/offices/pac/mpep/documents/appxl_35_U_S_C_101.htm) (accessed February 2010).

<sup>70</sup> *US Patent Reform Act 2009*, Title 35, s 101, see note 70. See also, <http://www.bitlaw.com/source/35usc/102.html> (accessed 23 March 2010); N J Szabo, “Elemental Subject Matter” available in <http://szabo.best.vwh.net/elementalsubjectmatter.pdf> (accessed 23 March 2010); L E Lesser, “We’ve Got Algorithm-Software Patents Boom”, available at <http://library.findlaw.com/1999/Aug/1/130894.html> (accessed 20 November 2009); J Farrell, C Shapiro, see note 11 above; S W Graf, see note 11 above; D Lichtman, M A Lemley, see note 48 above.

<sup>71</sup> *US Patent Reform Act 2009*, Title 35, s 101, see note 70 above; J Farrell, C Shapiro, see note 11 above; S W Graf, see note 11 above; D Lichtman, M A Lemley, see note 48 above.

<sup>72</sup> *US Patent Reform Act 2009*, Title 35, s 10, see note 70 above; N J Szabo, see note 71; L E Lesser, see note 71; J Farrell, C Shapiro, see note 11 above; S W Graf, see note 11 above; D Lichtman, M A Lemley, see note 48 above.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country more than one year prior to the date of the application for patent in the US,<sup>73</sup> or ...

S. 103(a) of the US Patent Act 2009 elaborates on non-obviousness of the subject matter as follows:<sup>74</sup>

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title [35 USC 102], if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.<sup>75</sup>

#### **4.2. Re-examination**

Third parties may challenge the validity of a patent on an ex parte or inter partes basis<sup>76</sup> by the re-examination process. This procedure enables a third party to raise questions of patentability.<sup>77</sup> One commentator has argued, “third parties wishing to attack the validity of an issued patent may also find that re-examination offers an attractive alternative to active litigation of validity issues.”<sup>78</sup> This is done through the requirement of prior art or printed publication and by raising a substantial question of patentability.<sup>79</sup> Once a request for re-examination of an issued patent has been granted, the patent examiner proceeds to examine the patent in relation to “substantial new questions of patentability, raised in the form of a prior patent, prior art or printed

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<sup>73</sup> *US Patent Reform Act 2009*, Title 35, s 102, available at [http://www.uspto.gov/web/offices/pac/mpep/documents/appxl\\_35\\_U\\_S\\_C\\_102.htm](http://www.uspto.gov/web/offices/pac/mpep/documents/appxl_35_U_S_C_102.htm) (accessed February 2010); 35 USC 102, available at <http://www.bitlaw.com/source/35usc/102.html> (accessed 23 March 2010); N J Szabo, see note 71; L E Lesser, see note 71.

<sup>74</sup> *US Patent Reform Act 2009*, Title 35, s 103, available at [http://www.uspto.gov/web/offices/pac/mpep/documents/appxl\\_35\\_U\\_S\\_C\\_103.htm](http://www.uspto.gov/web/offices/pac/mpep/documents/appxl_35_U_S_C_103.htm) (accessed February 2010); 35 USC 102, see note 74 above; N J Szabo, see note 71; L E Lesser, see note 71.

<sup>75</sup> *US Patent Reform Act 2009*, Title 35, s 103, see note 75 above; 35 USC 102, see note 74 above; N J Szabo, see note 71; L E Lesser, see note 71; J Farrell, C Shapiro, see note 11 above; S W Graf, see note 11 above; D Lichtman, M A Lemley, see note 48 above.

<sup>76</sup> G H Gardella, E A Berger, see note 11 above; J Farrell, C Shapiro, see note 11 above; S W Graf, see note 11 above; D Lichtman, M A Lemley, see note 48 above.

<sup>77</sup> R Young, see note 1 above; J Farrell, C Shapiro, see note 11 above; S W Graf, see note 11 above; D Lichtman, M A Lemley, see note 48 above.

<sup>78</sup> S Baugham, “Reexamining Reexaminations: A Fresh Look at the Ex-parte and Inter partes Mechanisms for Reviewing Issued Patents” (2007) 2 *Bloomberg Corporate Law Journal* 44; R Young, see note 1 above; J Farrell, C Shapiro, see note 11 above; S W Graf, see note 11 above; D Lichtman, M A Lemley, see note 48 above.

<sup>79</sup> R Young, see note 1 above; Baugham S, see note 79 above; ss 2244, 2644, MPEP 301, MPEP ss 2216, 2616, ss 304, 312. 35 of the United States; J Farrell, C Shapiro, see note 11 above; S W Graf, see note 11 above; D Lichtman, M A Lemley, see note 48 above.

publication.”<sup>80</sup> Which of these options the requester chooses to proceed upon will depend on various factors such as “budget, time constraints to technical complexity and the size of the potential prior art arsenal.”<sup>81</sup>

Commentators have suggested that the problem with the quality of patents stems largely from the patent examination conducted by the USPTO.<sup>82</sup> Problem patents are those granted in relation to claims that are broader than what is warranted by the invention and prior art.<sup>83</sup> It is without argument that patent law was traditionally created to promote and reward innovation and inventions.<sup>84</sup> Like copyright law, patent law enhances creativity and innovation in society.<sup>85</sup> Further, the patent system was developed to reward inventors for their creations and inventions and thus gave them the right to exclude others from using it.<sup>86</sup> The current USPTO has however granted patent claims that, if rigorously scrutinised, would not meet all criteria for patentability. A patent may, in particular, be invalidated on the basis of pre-existing art.<sup>87</sup> This is one of the ways in which the Patent Busting Project has challenged the validity of their targeted patents. The Project, which operates on a public interest basis, essentially documents damage, but also identifies various efforts that would assist in challenging the “worst patents”:<sup>88</sup>

(1) identification of the most offensive patents;

(2) documentation of prior art that demonstrates their invalidity; and

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<sup>80</sup> G H Gardella, E A Berger, see note 11 above; J Farrell, C Shapiro, see note 11 above; S W Graf, see note 11 above; D Lichtman, M A Lemley, see note 48 above; R Young, see note 1 above.

<sup>81</sup> See further G H Gardella, E A Berger, see note 11 above; S Baugham, see note 79 above; R Young, see note 1 above.

<sup>82</sup> See further D L Burk M A Lemley, see note 10 above; see further J E Cohen M A Lemley, see note 9 above; D L Burk, M A Lemley, “Is Patent Law Technology –Specific?” available at [http://ssrn.com/abstract\\_id=349761](http://ssrn.com/abstract_id=349761) (accessed 24 March 2010); F M Scherer, see note 10 above; J Bessen, R M Hunt, see note 9 above.

<sup>83</sup> See further G H Gardella, E A Berger, see note 11 above; S Baugham, see note 79 above; D L Burk, M A Lemley, see note 83 above; J Farrell, C Shapiro, see note 11 above; S W Graf, see note 11 above; D Lichtman, M A Lemley, see note 48 above; J Kesan, “Carrots and Sticks to Create a Better Patent System” (2002) *Berkeley Technology Law Journal* 763-798; R Young, see note 1 above.

<sup>84</sup> R Young, see note 1 above; G H Gardella, E A Berger, see note 11 above; S Baugham, see note 79 above; D L Burk, M A Lemley, see note 83 above; J Farrell, C Shapiro, see note 11 above; S W Graf, see note 11 above; D Lichtman, M A Lemley, see note 48 above; J Kesan, see note 84 above, R Young, see note 1 above.

<sup>85</sup> R Young, see note 1 above; G H Gardella, E A Berger, see note 11 above; S Baugham, see note 79 above; D L Burk, M A Lemley, see note 83 above; J Farrell, C Shapiro, see note 11 above; S W Graf, see note 11 above; D Lichtman, M A Lemley, see note 48 above; J Kesan, see note 84 above.

<sup>86</sup> R Young, see note 1 above; G H Gardella, E A Berger, see note 11 above; S Baugham, see note 79 above; D L Burk, M A Lemley, see note 83 above; J Farrell, C Shapiro, see note 11 above; S W Graf, see note 11 above; D Lichtman, M A Lemley, see note 48 above; J Kesan, see note 84 above.

<sup>87</sup> See further G R Vetter, see note 11 above; R C Dreyfus, see note 11 above; J L Reed, see note 11 above; J Farrell, C Shapiro, see note 11 above; S W Graf, see note 11 above; D Lichtman, M A Lemley, see note 48 above; R J Mann, see note 67 above; D L Burk, M A Lemley, see note 83 above; J M Golden, see note 19 above; G N Magliocca, see note 23 above; R M Whitmeyer, see note 23 above; M A Lemley, C Shapiro, see note 10 above; D Myers, see note 18 above; A Chuang, see note 10 above; see G H Gardella, E A Berger, see note 11 above; D Durie, M A Lemley, see note 11 above;

<sup>88</sup> See EFF, see note 1 above.

(3) chronicling their negative impact on online publishers and innovators.<sup>89</sup>

This is to be achieved through public contributions, collaboration and educating the public.<sup>90</sup> EFF comment that their plan is to investigate different ways in which this can be done including “building on the successful information-gathering and public education of the Chilling Effect clearinghouse; and collaborating with organizations such as the Internet Archive, the Public Patent Foundation, Peer2Patent and various technology law school clinics around the country.”<sup>91</sup> The difficulty lies in searching for prior art, which is not well documented due to the nature of the software and computer field.<sup>92</sup> There are many different classifications of patents, which range from electronics, pharmaceuticals, biotechnology, machines and business methods, inventions and software patents.<sup>93</sup>

Interestingly, in the US it has, in the past, been difficult to ascertain whether or not there is prior art within software patents, yet somehow the patent owners managed to acquire a grant of patent.<sup>94</sup> The Patent Busting Project has called for any known prior art to be disclosed to them to enable them to file requests for re-examination with the US Patent Office.<sup>95</sup> In June 2008, the Project called for public participation in order to obtain the evidence of prior art necessary for filing such requests.<sup>96</sup>

Although the Patent Busting Project has enjoyed some level of success by targeting its campaign against some of the “worst offenders”,<sup>97</sup> this is a small fraction of what it could achieve if the necessary resources and funds were available to enable it to ascertain prior art to invalidate the subject patents. The Patent Busting Project is slowly meeting its objective of invalidating some software patents, but its effectiveness is limited by the minimal number of software patents that it has targeted. It has selected and targeted only what it deems to be “the worst offending patents” to challenge and invalidate. While the process of patenting is lengthy and costly, so is the process for challenging a software patent. Interestingly, the decision *in Re Bilski* demonstrated that a patent could be invalidated while the patent owner is trying to enforce his “rights”. The concerning issue is that most companies or small start ups (in technology-related areas) do not have the financial means to defend themselves

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<sup>89</sup> Ibid.

<sup>90</sup> Ibid.

<sup>91</sup> Ibid.

<sup>92</sup> See further discussion by J E Cohen, M A Lemley, see note 9 above; J R Allison, M A Lemley, A Walker, see note 9 above; F M Scherer, see note 10 above; W C Rooklidge, A G Barker, see note 10 above; A Tindell, see note 19 above.

<sup>93</sup> This is not an exhaustive list.

<sup>94</sup> See further L E Lesser, see note 71; G R Vetter, see note 11 above; R C Dreyfus, see note 11 above; J L Reed, see note 11 above; J Farrell, C Shapiro, see note 11 above; S W Graf, see note 11 above; D Lichtman, M A Lemley, see note 48 above; R J Mann, see note 67 above; D L Burk, M A Lemley, see note 83 above.

<sup>95</sup> See EFF, see note 1 above.

<sup>96</sup> See EFF, see note 1 above; R Young, see note 1 above.

<sup>97</sup> See L E Lesser, see note 71; G R Vetter, see note 11 above; R C Dreyfus, see note 11 above; J L Reed, see note 11 above; J Farrell, C Shapiro, see note 11 above; S W Graf, see note 11 above; D Lichtman, M A Lemley, see note 48 above; R J Mann, see note 67 above; D L Burk, M A Lemley, see note 83 above.

against litigation, which forces them to pay royalties or license fees. Perhaps further collaboration between projects calling to “end software patents”, by pooling resources and collectively targeting more “bad software patents”, would result in the demise of software patents. The US Federal Circuit has however made a little headway in overturning valid software patents and re-evaluating entrenched patent principles established by cases such as *Diamond v Diehr*,<sup>98</sup> *State Street Bank case*<sup>99</sup> and more recently *in Re Bilski*,<sup>100</sup> which can only give hope to the open source community and innovators of technology.<sup>101</sup> Despite the hope of reform of the patent system, recent cases do not specifically address how software patents are to be dealt with under the patent system. Seemingly a “one size fits all” patent is not the most viable proposal for reform as it potentially acts as a bandaid instead of resolving the tension between open source and patents.

Prominent commentators in the open source community have stated that whereas previously patents may have been created to stimulate innovation, they now have an adverse affect in the software industry.<sup>102</sup> Perens comments that “plagued by an exponential growth in software patents, many of which are not valid, software vendors and developers must navigate a potential minefield to avoid patent infringement and future lawsuits.”<sup>103</sup> This is demonstrated in many aspects of technology: the fear of patent infringement suits, whether by competing software developers or standard-setting organisations, is very much an imminent reality.<sup>104</sup>

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<sup>98</sup> *Diamond v. Diehr*, 450 U.S. 175 (1981).

<sup>99</sup> *State Street Bank v. Signature Financial Group*, 149 F.3d 1368 (Fed. Cir. 1998), 47 USPQ2d,1596; L E Lesser, see note 71.

<sup>100</sup> *In re Bilski*, 545 F.3d 943, 88 U.S.P.Q.2d 1385 (Fed. Cir. 2008) en banc decision of the United States Court of Appeals for the Federal Circuit (CAFC) on the patentability of business methods.

<sup>101</sup> See [http://news.cnet.com/8301-10784\\_3-9939515-7.html](http://news.cnet.com/8301-10784_3-9939515-7.html) (accessed 24 March 2010).

<sup>102</sup> B Perens, see note 18 above; Perens B, “The Confusion of Tongues: EIF 2.0, Standards, and Interoperability”, available at <http://perens.com/works/articles/EIF2/> (accessed 24 March 2010).

<sup>103</sup> B Perens, see note 18 above; M Reitzig, J Henkel, C Heath, see note 11 above; B L Smith S O Mann, see note 11 above; D W Operbeck, see note 11 above; D S Evans, A Layne-Farrar, see note 20 above; C V Chien, see note 20 above; W M Schuster, “Predictability and Patentable Processes: The Federal Circuit’s *IN Re Bilski* Decision and Its Effect on the Incentive to Invent”, *Columbia Science and Technology Law Review* available at <http://www.stlr.org/cite.cgi?volume=11&article=1> (accessed 24 March 2010); J Rantanen, see note 19 above; P S Abril, R Plant, see note 21 above; S E Abraham see note 19 above; V Atal, T Bar, “Prior Art: To Search Or Not To Search?” (2010) *International Journal of Industrial Organisation* 1-15; A Tindell, see note 19 above; K D Rowe, see note 19 above; W C Rooklidge, A G Barker, see note 10 above; J R Allison, M A Lemley, A Walker, see note 9 above; C Shapiro, see note 10 above; J M Golden, see note 19 above; G N Magliocca, see note 23 above; R M Whitmeyer, see note 23 above; M A Lemley C Shapiro, see note 10 above; D Myers, see note 18 above; A Chuang, see note 10 above; G H Gardella, E A Berger, see note 11 above; D Durie, M A Lemley, see note 11 above; G C Yang, see note 28 above; G R Vetter, see note 11 above; R C Dreyfus, see note 11 above; J L Reed, see note 11 above; J Farrell, C Shapiro, see note 11 above; S W Graf, see note 11 above; D Lichtman, M A Lemley, see note 48 above; R J Mann, see note 67 above; D L Burk, M A Lemley, see note 83 above; G R Vetter, see note 11 above; R C Dreyfus, see note 11 above.

<sup>104</sup> See B Perens, see note 18 above; J E Cohen, M A Lemley, see note 9 above; R Stallman R, “The Dangers of Software Patents” (24-05-2004) transcript by the Irish Free Software Organisation, available at <http://www.ifso.ie/documents/rms-2004-05-24.html>; J Farrell, C Shapiro, see note 11 above; S W Graf, see note 11 above; D Lichtman, M A Lemley, see note 48 above; R C Dreyfus, see note 11 above; J L Reed, see note 11 above.



More specifically, developers of software companies experience fear and uncertainty that their software may infringe an unknown software patent owned by a reputable corporation.<sup>105</sup> It has been argued that the problem of software patents is becoming increasingly onerous on a larger scale for international standard-setting bodies, which develop technical standards such as software patents.<sup>106</sup> This is demonstrated by the occurrence of patent trolls and submarine patents; these are tactics of patent owners to stifle innovation by disallowing developers to use technology that is commonly used in the Internet and the digital environment.<sup>107</sup>

The patent owner threatens patent litigation; the other party is forced to negotiate settlement outside of court.<sup>108</sup> Licensing fees are another way in which patent owners

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<sup>105</sup> See further discussion and commentary B Kahin, see note 26 above; B Perens, see note 18 above; See also J E Cohen, M A Lemley, see note 9 above; M Vailimaki, V Oksanen, "Patents on Compatibility Standards and Open Source- Do Patent Law Exceptions and Royalty free requirements Make Sense?" (2005) *Script-ed*, available at <http://www.law.ed.ac.uk/ahrc/script-ed/vol2-3/vailimaki.asp> (accessed 24 March 2010); M Reitzig, J Henkel, C Heath, see note 11 above; B L Smith, S O Mann, see note 11 above, at 241; D W Opperbeck, see note 11 above; D S Evans, A Layne-Farrar, see note 20 above; C V Chien, see note 20 above; W M Schuster, see note 104 above; J Rantanen, see note 19 above; P S Abril, R Plant, see note 21 above; S E Abraham, see note 19 above; V Atal, T Bar, see note 104 above; A Tindell, see note 19 above; K D Rowe, see note 19 above; W C Rooklidge, A G Barker, see note 10 above; J R Allison, M A Lemley, A Walker, see note 9 above; C Shapiro, see note 10 above; J M Golden, see note 19 above; G N Magliocca, see note 23 above; R M Whitmeyer, see note 23 above; M A Lemley C Shapiro, see note 10 above; D Myers, see note 18 above; A Chuang, see note 10 above; G H Gardella, E A Berger, see note 11 above; D Durie, M A Lemley, see note 11 above; G C Yang, see note 28 above; G R Vetter, see note 11 above; R C Dreyfus, see note 11 above; J L Reed, see note 11 above; J Farrell, C Shapiro, see note 11 above; S W Graf, see note 11 above; D Lichtman, M A Lemley, see note 48 above; R J Mann, see note 67 above; D L Burk, M A Lemley, see note 83 above.

<sup>106</sup> A Chuang, see note 10 above; G H Gardella, E A Berger, see note 11 above; D Durie, M A Lemley, see note 11 above; G C Yang, see note 28 above; G R Vetter, see note 11 above; R C Dreyfus, see note 11 above; J L Reed, see note 11 above; J Farrell, C Shapiro, see note 11 above; S W Graf, see note 11 above; D Lichtman, M A Lemley, see note 48 above; R J Mann, see note 67 above; D L Burk, M A Lemley, see note 83 above; B Kahin, see note 26 above; B Perens, see note 18 above; see also J E Cohen, M A Lemley see note 9 above.

<sup>107</sup> See further, B Perens, see note 18 above; and see also J R Allison, M A Lemley, A Walker, see note 9 above; J Rantanen, see note 19 above; P S Abril, R Plant, see note 21 above; S E Abraham see note 19 above; K D Rowe, see note 19 above; M Reitzig, J Henkel, C Heath, see note 11 above; B L Smith, S O Mann, see note 11 above; see also D W Opperbeck, see note 11 above; D S Evans, A Layne-Farrar, see note 20 above; C V Chien, see note 20 above; W M Schuster, see note 104 above; P S Abril, R Plant, see note 21 above; S E Abraham see note 19 above; V Atal, T Bar, see note 204 above; A Tindell, see note 19 above; W C Rooklidge, A G Barker, see note 10 above; J R Allison, M A Lemley, A Walker see note 9 above; C Shapiro, see note 10 above; J M Golden, see note 19 above; G N Magliocca, see note 23 above; R M Whitmeyer, see note 23 above; M A Lemley, C Shapiro, see note 10 above; D Myers, see note 18 above; A Chuang, see note 10 above; G H Gardella, E A Berger, see note 11 above; D Durie, M A Lemley, see note 11 above; G C Yang, see note 28 above; G R Vetter, see note 11 above; R C Dreyfus, see note 11 above; J L Reed, see note 11 above; J Farrell, C Shapiro, see note 11 above; S W Graf, see note 11 above; D Lichtman, M A Lemley, see note 48 above; R J Mann, see note 67 above; D L Burk, M A Lemley, see note 83 above; B Kahin, "Reformers must alter one size fits all patents", available at [http://news.cnet.com/2010-1014\\_3-6197342.html](http://news.cnet.com/2010-1014_3-6197342.html) (accessed 24 March 2010).

<sup>108</sup> See further B Kahin, "Common and Uncommon Knowledge Reducing Conflict between Standards and patents", available at <http://www.si.umich.edu/~kahin/kahinpubs.html> (accessed 24 March 2010); B Kahin, see note 108 above; B Kahin, see note 26 above; B Perens, see note 18 above; see also J E Cohen M A Lemley, see note 9 above; M Vailimaki, V Oksanen, see note 106 above.



can threaten the alleged infringers.<sup>109</sup> Traditionally the term patent trolls have been assigned to companies who commercially behave in this fashion.<sup>110</sup> Companies who acquire and expand their patent portfolios prey on the unsuspecting.<sup>111</sup>

Software patents have surged with the advancement in technological innovation and the digital environment since the advent of the Internet. The open source movement and software patents are unable to coexist in a harmonious environment due to the commercially aggressive stance of patents in the “corporate” environment. A misconception exists in the commercial world, perpetuated by the nature of the patent system. A patent does not only give the owner a right to license the patent for commercial exploitation, but creates a negative right that aims to completely exclude

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<sup>109</sup> See further B Kahin, see note 109 above; B Perens, see note 18 above; “The Current State of Software and Business method patents: 2008”, available at [http://esp.wdfiles.com/local--files/2008-state-of-softpatents/feb\\_08-summary\\_report.pdf](http://esp.wdfiles.com/local--files/2008-state-of-softpatents/feb_08-summary_report.pdf) (accessed 24 March 2010); M Reitzig, J Henkel, C Heath, see note 11 above; B L Smith, S O Mann, see note 11 above; D W Opperbeck, see note 11 above; D S Evans, A Layne-Farrar, see note 20 above; C V Chien, see note 20 above; W M Schuster, see note 104 above; J Rantanen, see note 19 above; P S Abril, R Plant, see note 21 above; S E Abraham, see note 19 above; V Atal, T Bar, see note 104 above; A Tindell, see note 19 above; K D Rowe, see note 19 above; W C Rooklidge, A G Barker, see note 10 above; J R Allison, M A Lemley, A Walker, see note 9 above; C Shapiro, see note 10 above; J M Golden, see note 19 above; G N Magliocca, see note 23 above; R M Whitmeyer, see note 23 above; M A Lemley; C Shapiro, see note 10 above; D Myers, see note 18 above; A Chuang, see note 10 above; G H Gardella, E A Berger, see note 11 above; D Durie, M A Lemley, see note 11 above; G C Yang, see note 28 above; G R Vetter, see note 11 above; R C Dreyfus, see note 11 above; J L Reed, see note 11 above; J Farrell, C Shapiro, see note 11 above; S W Graf, see note 11 above; D Lichtman, M A Lemley, see note 48 above; R J Mann, see note 67 above; D L Burk, M A Lemley, see note 83 above.

<sup>110</sup> B Kahin, see note 109 above; B Kahin, see note 108 above; “The Current State of Software and Business method patents: 2008”, see note 110 above; M Reitzig, J Henkel, C Heath, see note 11 above; B L Smith, S O Mann, see note 11 above; D W Opperbeck, see note 11 above; D S Evans, A Layne-Farrar, see note 20 above; C V Chien, see note 20 above; W M Schuster, see note 104 above; J Rantanen, see note 19 above; P S Abril, R Plant, see note 21 above; S E Abraham, see note 19 above; V Atal, T Bar, see note 104 above; A Tindell, see note 19 above; K D Rowe, see note 19 above; W C Rooklidge, A G Barker, see note 10 above; J R Allison, M A Lemley, A Walker see note 9 above; C Shapiro, see note 10 above; J M Golden, see note 19 above; G N Magliocca, see note 23 above; R M Whitmeyer, see note 23 above; M A Lemley, C Shapiro, see note 10 above; D Myers, see note 18 above; A Chuang, see note 10 above; G H Gardella, E A Berger, see note 11 above; D Durie, M A Lemley, see note 11 above; G C Yang, see note 28 above; G R Vetter, see note 11 above; R C Dreyfus, see note 11 above; J L Reed, see note 11 above; J Farrell, C Shapiro, see note 11 above; S W Graf, see note 11 above; D Lichtman, M A Lemley, see note 48 above; R J Mann, see note 67 above; D L Burk, M A Lemley, see note 83 above.

<sup>111</sup> B Kahin, see note 109 above; B Kahin, see note 108 above; “The Current State of Software and Business method patents: 2008”, see note 110 above; M Reitzig, J Henkel, C Heath, see note 11 above; B L Smith, S O Mann, see note 11 above; D W Opperbeck, see note 11 above; D S Evans, A Layne-Farrar, see note 20 above; C V Chien, see note 20 above; W M Schuster, see note 104 above; J Rantanen, see note 19 above; P S Abril, R Plant, see note 21 above; S E Abraham, see note 19 above; V Atal, T Bar, see note 104 above; A Tindell, see note 19 above; K D Rowe, see note 19 above; W C Rooklidge, A G Barker, see note 10 above; J R Allison, M A Lemley, A Walker see note 9 above; C Shapiro, see note 10 above; J M Golden, see note 19 above; G N Magliocca, see note 23 above; R M Whitmeyer, see note 23 above; M A Lemley, C Shapiro, see note 10 above; D Myers, see note 18 above; A Chuang, see note 10 above; G H Gardella, E A Berger, see note 11 above; D Durie, M A Lemley, see note 11 above; G C Yang, see note 28 above; G R Vetter, see note 11 above; R C Dreyfus, see note 11 above; J L Reed, see note 11 above; J Farrell, C Shapiro, see note 11 above; S W Graf, see note 11 above; D Lichtman, M A Lemley, see note 48 above; R J Mann, see note 67 above; D L Burk, M A Lemley, see note 83 above.

others from using the patented invention.<sup>112</sup> Software patent holders have surpassed the traditional means of exploitation - collection of licensing fees, royalties, and the like.<sup>113</sup> The practice of “patent trolling and patent abuse” has reinforced the oppression of innovation that exists in the current environment.<sup>114</sup>

#### ***4.3 What are the risks associated with using open source licences?***

There is a high risk in the open source community that source code used or written by a developer may infringe a patent that exists somewhere in the ether of the Internet.<sup>115</sup> The risk extends to open source software packages, and commercial software, and industry standards that use the technology.<sup>116</sup> Uncertainty may be particularly acute for the developer of open source software programs because it would not normally have the means to obtain licences for all users of the software, or it may unknowingly

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<sup>112</sup> See further B Kahin, see note 109 above; B Kahin, see note 108 above; B Perens, see note 18 above; “The Current State of Software and Business method patents: 2008”, see note 110 above.

<sup>113</sup> See also B Perens, see note 18 above; B Perens, “Software Patent s vs Free Software” available at <http://perens.com/articles/patents.html> (accessed 24 March 2010); B Kahin, see note 109 above; “The Current State of Software and Business method patents: 2008”, see note 110 above; M Reitzig, J Henkel, C Heath, see note 11 above; B L Smith, S O Mann, see note 11 above; D W Opderbeck see note 11 above; D S Evans, A Layne-Farrar, see note 20 above; C V Chien, see note 20 above; W M Schuster, see note 104 above; J Rantanen, see note 19 above; P S Abril, R Plant, see note 21 above; S E Abraham, see note 19 above; V Atal, T Bar, see note 104 above; A Tindell, see note 19 above; K D Rowe, see note 19 above; W C Rooklidge, A G Barker, see note 10 above; J R Allison, M A Lemley, A Walker see note 9 above; C Shapiro, see note 10 above; J M Golden, see note 19 above; G N Magliocca, see note 23 above; R M Whitmeyer, see note 23 above; M A Lemley, C Shapiro, see note 10 above; D Myers, see note 18 above; A Chuang, see note 10 above; G H Gardella, E A Berger, see note 11 above; D Durie, M A Lemley, see note 11 above; G C Yang, see note 28 above; G R Vetter, see note 11 above; R C Dreyfus, see note 11 above; J L Reed, see note 11 above; J Farrell, C Shapiro, see note 11 above; S W Graf, see note 11 above; D Lichtman, M A Lemley, see note 48 above; R J Mann, see note 67 above; D L Burk, M A Lemley, see note 83 above.

<sup>114</sup> B Kahin, see note 109 above; “The Current State of Software and Business method patents: 2008”, see note 110 above; M Reitzig, J Henkel, C Heath, see note 11 above; B L Smith, S O Mann, see note 11 above; D W Opderbeck, see note 11 above; D S Evans, A Layne-Farrar, see note 20 above; C V Chien, see note 20 above; W M Schuster, see note 104 above; J Rantanen, see note 19 above; P S Abril, R Plant, see note 21 above; S E Abraham, see note 19 above; V Atal, T Bar, see note 104 above; A Tindell, see note 19 above; K D Rowe, see note 19 above; W C Rooklidge, A G Barker, see note 10 above; J R Allison, M A Lemley, A Walker see note 9 above; C Shapiro, see note 10 above J M Golden, see note 19 above; G N Magliocca, see note 23 above; R M Whitmeyer, see note 23 above; M A Lemley, C Shapiro, see note 10 above; D Myers, see note 18 above; A Chuang, see note 10 above; G H Gardella, E A Berger, see note 11 above; D Durie, M A Lemley, see note 11 above; G C Yang, see note 28 above; G R Vetter, see note 11 above; R C Dreyfus, see note 11 above; J L Reed, see note 11 above; J Farrell, C Shapiro, see note 11 above; S W Graf, see note 11 above; D Lichtman, M A Lemley, see note 48 above; R J Mann, see note 67 above; D L Burk, M A Lemley, see note 83 above.

<sup>115</sup> See “Patent Risks of Open Source Software”, available at <http://www.iusmentis.com/computerprograms/opensourcesoftware/patentrisks/> (accessed 29 October 2008); D Lichtman, M A Lemley, see note 48 above; R J Mann, see note 67 above; J L Reed, see note 11 above; J Farrell, C Shapiro, see note 11 above; S W Graf, see note 11 above; G C Yang, see note 28 above; G R Vetter, see note 11 above; A Chuang, see note 10 above; G H Gardella, E A Berger, see note 11 above; D Durie, M A Lemley, see note 11 above.

<sup>116</sup> See “Patent Risks of Open Source Software”, see note 116 above; G C Yang, see note 28 above; G R Vetter, see note 11 above; A Chuang, see note 10 above; G H Gardella, E A Berger, see note 11 above.

incorporate a patent in its source code.<sup>117</sup> Because of the openness of open source software it is easier to ascertain whether there has been patent infringement.<sup>118</sup> Within the open source community, software developers can access source code and build, improve upon or enhance it, but the improvements must be returned to the community on the same principles, and be made openly available to other users.<sup>119</sup>

The software/technology industry has seen some vicious tactics, whereby threat of litigation for patent infringement forces software developers, owners and organisations to either pay exorbitant license fees or lose their livelihood out of sheer inability to defend the infringement suits.<sup>120</sup> It is evident that there is a great power imbalance in relation to the software patents and particularly open source, when one considers that an unknown software developer may write a source code, make it available to the community and the world at large, and some time later be threatened with patent infringement because a software patent that they were unaware of was included in the code.<sup>121</sup> The problem with software patents is not only that they are extremely difficult to find in the patent system (due to applications under consideration that are not yet publicly available) but that they must meet specific requirements based on prior art. The source code is protected by copyright but the functionality of the source code is what is patented.<sup>122</sup> The two are very distinct and separate and should not be considered together.<sup>123</sup> Interestingly, although practices such as patent trolling, patent farming, or royalties or licensing fee revenue are legal, there are serious questions as to whether these practices are ethical in relation to open source and software patents. It is clear that patent law protects the patent owner, and the question of patentability raises significant issues of the existence of prior art, searching, and considering whether or not the application for a software patent meets all the essential criteria.

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<sup>117</sup> “Patent Risks of Open Source Software”, see note 116 above; G C Yang, see note 28 above; G R Vetter, see note 11 above; A Chuang, see note 10 above; G H Gardella, E A Berger, see note 11 above.

<sup>118</sup> “Patent Risks of Open Source Software”, see note 116 above; G C Yang, see note 28 above; G R Vetter, see note 11 above; A Chuang, see note 10 above; G H Gardella, E A Berger, see note 11 above.

<sup>119</sup> “Patent Risks of Open Source Software”, see note 116 above; G C Yang, see note 28 above; G R Vetter, see note 11 above; A Chuang, see note 10 above; G H Gardella, E A Berger, see note 11 above.

<sup>120</sup> See further T B Lee, “Analysis: Patent Reform Bill Unable to Clean Up Patent Mess”, available at <http://arstechnica.com/articles/culture/clean-up-patent-mess.ars/2> (accessed 20 November 2008); N V Riley, “The Crossroads of Patentability and Validity: Why resolving Congressional Internet will not Fix functional Claims” (2007) *The John Marshall Review of Intellectual Property Law* 218-244; R Young, see note 1 above.

<sup>121</sup> See further T B Lee, see note 121 above; N V Riley, see note 121; G C Yang, see note 28 above; G R Vetter, see note 11 above; A Chuang, see note 10 above; G H Gardella, E A Berger, see note 11 above.

<sup>122</sup> See further T B Lee, see note 121 above; N V Riley, see note 121. R Young, see note 1 above.

<sup>123</sup> R Stallman, “Software Patents – Obstacles to Software Development”, available at <http://www.cl.cam.ac.uk/~mgk25/stallman-patents.html> (accessed 30 October 2008); J Atwood, “The Coming Software Patent Apocalypse”, available at <http://www.codinghorror.com/blog/archives/000902.html> (accessed 24 March 2010); G C Yang, see note 28 above; G R Vetter, see note 11 above; A Chuang, see note 10 above; G H Gardella, E A Berger, see note 11 above.

There are risks for “distributors of CD-ROMS with open source software which count as ‘indirect infringement’ as demonstrated by the example of Linux distributor Red Hat which removed all the MP3 software from its distribution due to the potential conflicts of MP3 licensing programs.”<sup>124</sup> If the open source software is incorporated in a technology that is commercially viable (e.g. an expensive digital technology or service, etc), then the patent holder will most likely approach the users of the open source software infringing the patent.<sup>125</sup> There are a few cases - categorised as “patent troll” cases - that demonstrate the financial consequences of patent infringement. The *Eolas v Microsoft* case, for example, had proceedings that were drawn out for several years in a series of successes for both sides, with the final decision by the Federal Circuit asserting that Microsoft had infringed on Eolas’ patent.<sup>126</sup>

This is a common practice in various technology industries. Standard setting organisations (SSOs) in the computer and technology industries, for example, have been exposed to the practices of patent holders who simply hold the patent in ransom in exchange for royalties and high license fees.<sup>127</sup> Despite being present in the standard development process, and claims of open standards, the reality is that patent owners/holders will not disclose their interests in that environment and once the technology has been incorporated as a standard they threaten patent infringement.<sup>128</sup> While some of the major players in SSOs require that the patent holder licence on RAND (reasonable and non-discriminatory terms) or FRAND (fair reasonable and non discriminatory terms), the reality is that the terms of reasonable and non discriminatory, or fair reasonable and non discriminatory, are left to the individual parties to negotiate.<sup>129</sup> The price for a small business that uses open source software is

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<sup>124</sup> See “Patent Risks of Open Source Software”, see note 116 above; J Atwood, see note 124 above; G R Vetter, see note 11 above; A Chuang, see note 10 above; G H Gardella, E A Berger, see note 11 above.

<sup>125</sup> M A Lemley, “Intellectual Property Rights and Standard Setting Organisations”, available at [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=310122](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=310122) (accessed 24 March 2010); B Kahin, see note 109 above; B Kahin, see note 108 above; <http://www.iusmentis.com/computerprograms/opensourceoftware/patentrisks/#Patentrisksforumsofopensourceoftware> accessed 29 October 2008; J Atwood, see note 124 above.

<sup>126</sup> *Eolas Technologies Inc v Microsoft Corp.* 399 F/3d.1325.1328 (Fed.Cir.2005).

<sup>127</sup> See *Qualcomm Inc. v. Broadcom Corp.*, 548 F.3d 1004 (Fed. Cir. 2008) where in that case there it was patent owner was silent in relation to disclosure of patent rights to the proposed technology being incorporated in the standard. See also, *Eolas Technologies Inc v Microsoft Corp.* 399 F/3d.1325.1328 (Fed.Cir.2005), where in that case it examined the validity of a patent and was successful against Microsoft in patent litigation. It has recently launched patent infringement suits against several technology companies such as Apple, see also *Rambus v Infineon*, in which the Federal Circuit had interpreted the policy of the standard setting organisation narrowly. After very lengthy proceedings this case has settled out of court. See further D Alban, “Rambus v Infineon: Patent Disclosures in Standard Setting Organisations” (2004) *Berkeley Technology Law Journal* 309-332; B Perens, see note 18 above; M A Lemley, see note 126 above; B Kahin, see note 109 above; B Kahin, see note 108 above.

<sup>128</sup> B Perens, see note 18 above; M A Lemley, see note 126 above; B Kahin, see note 109 above; B Kahin, see note 108 above; G C Yang, see note 28 above; G R Vetter, see note 11 above; A Chuang, see note 10 above; G H Gardella, E A Berger, see note 11 above.

<sup>129</sup> B Perens, see note 18 above; B Perens, “Bruce Perens: Microsoft and Apache - What's the Angle?”, available at <http://itmanagement.earthweb.com/osrc/article.php/3762786/Bruce+Perens:+Microsoft+and+Apache+-+Whats+the+Angle?.htm> (accessed 24 March 2010); M A Lemley, see note 126 above; B Kahin, see

pay up or shut down. Many small businesses simply cannot afford the licence fees or the litigation fees and thus their very livelihood is attacked.<sup>130</sup> The crux of the problem can be broken down even further to show that such practices threaten anti-trust and competition.<sup>131</sup> Moreover, the patent system is fraught with granting software patents that do not meet all the requirements, but due to the large number of patent applications, they get approved without in depth scrutiny.<sup>132</sup>

#### **4.4. What are the risks associated for patent holders?**

While there are risks for users of open source software, conversely there are risks for patent holders. It has been suggested that various open source software licences are drafted with the intention of reducing or minimising the risks of patent infringement for writers and users of software.<sup>133</sup> For example, when patent holders distribute “open source software under a license, they may be forced to grant a royalty free license or a non assert declaration to all users of the software.”<sup>134</sup> This means that all users of the software must agree that they will not assert any right to the open source software or will operate under a royalty free licence. There are issues with the concept of royalty-free licences and non-assertion declarations in so far as these have not been tested in courts.<sup>135</sup>

Usually patent holders will not grant a royalty free licence if their patent has been incorporated into open source software, but they will then either license on RAND or FRAND.<sup>136</sup> As mentioned earlier, these terms have caused great confusion in

note 109 above; B Kahin, see note 108 above; G C Yang, see note 28 above; G R Vetter, see note 11 above; A Chuang, see note 10 above; G H Gardella, E A Berger, see note 11 above.

<sup>130</sup> EFF, see note 1 above; see note 13 above; M A Lemley, see note 126 above; G C Yang, see note 28 above; G R Vetter, see note 11 above; A Chuang, see note 10 above; G H Gardella, E A Berger, see note 11 above.

<sup>131</sup> See M Reitzig, J Henkel, C Heath, see note 11 above; B L Smith, S O Mann, see note 11 above; D W Opperbeck, see note 11 above; D S Evans, A Layne-Farrar, see note 20 above; C V Chien, see note 20 above; W M Schuster, see note 104 above; J Rantanen, see note 19 above; P S Abril, R Plant, see note 21 above; S E Abraham, see note 19 above; V Atal, T Bar, see note 104 above; A Tindell, see note 19 above; K D Rowe, see note 19 above; W C Rooklidge, A G Barker, see note 10 above; J R Allison, M A Lemley, A Walker, see note 9 above; C Shapiro, see note 10 above; J M Golden, see note 19 above; G N Magliocca, see note 23 above; R M Whitmeyer, see note 23 above; M A Lemley, C Shapiro, see note 10 above; D Myers, see note 18 above; A Chuang, see note 10 above; G H Gardella, E A Berger, see note 11 above; D Durie, M A Lemley, see note 11 above; G C Yang, see note 28 above; G R Vetter, see note 11 above; R C Dreyfus, see note 11 above; J L Reed, see note 11 above; J Farrell, C Shapiro, see note 11 above; S W Graf, see note 11 above; D Lichtman, M A Lemley, see note 48 above; R J Mann, see note 67 above; D L Burk, M A Lemley, see note 83 above.

<sup>132</sup> EFF, see note 1 above; M A Lemley, see note 126 above; G C Yang, see note 28 above; G R Vetter, see note 11 above; A Chuang, see note 10 above; G H Gardella, E A Berger, see note 11 above.

<sup>133</sup> See “Patent Risks of Open Source Software”, see note 116 above; G C Yang, see note 28 above; G R Vetter, see note 11 above; A Chuang, see note 10 above; G H Gardella, E A Berger, see note 11 above.

<sup>134</sup> See “Patent Risks of Open Source Software”, see note 116 above.

<sup>135</sup> See “Patent Risks of Open Source Software”, see note 116 above; G C Yang, see note 28 above; G R Vetter, see note 11 above; G C Yang, see note 28 above.

<sup>136</sup> For further discussion see M A Lemley, see note 126 above; Lemley with Shapiro in various articles such as “Patent Hold up and Royalty”, see note 11 above; B Kahin, “Too Many Patents? How Patent

themselves because they are undefined and are usually left to the negotiation of the parties. This is especially prominent where software patents are used in establishing technology standards.

### 5. Impact of Patent Busting? Flop or Blockbuster

It has been argued that without patent reform the abuse of the US patent system will only escalate further. Currently, in the US the senate has passed the US Patent Reform Act of 2009. However the proposed reforms have shifted from the first to invent to a first to file system. The patent reforms have certainly raised some uncertainty to the longevity of the EFF's Patent Busting Project whose goal is to release the chains of oppression of innovation. At issue could be the EFF's Patent Busting Project, which has targeted a number of patents that the group believes are overbroad and harmful to innovation.<sup>137</sup> Anderson states that the:

EFF's latest target is a multiplayer gaming patent that covers "a method and system for playing games on a network." The current re-examination process allows the group to ask the Patent Office to take another look so long as the EFF provides both 1) cash to fund the process and 2) examples of prior art. In this case, the old Netrek game (among others) is alleged to be obvious prior art.<sup>138</sup>

Commentators have suggested that the extent of patent trolls is significant in repressing innovation for unscrupulous commercial exploitation.<sup>139</sup> This is achieved through various means, such as a patent owner threatening to sue for patent infringement but accepting an exorbitant settlement fee, or compulsory licensing of the patent using expensive licensing fees.<sup>140</sup> While this hardly makes a dent in terms

Inflation Plagues Information Technology", available at [http://www.huffingtonpost.com/brian-kahin/too-many-patents-how-pa\\_b\\_85621.html](http://www.huffingtonpost.com/brian-kahin/too-many-patents-how-pa_b_85621.html), (accessed 24 March 2010).

<sup>137</sup> See "EFF Says Patent Reform Could Bust its Patent Busting Project", available at <http://arstechnica.com/news.ars/post/20080205-eff-says-patent-reform-could-bust-its-patent-busting-project.htm> (accessed 24 March 2010); G C Yang, see note 28 above; G R Vetter, see note 11 above.

<sup>138</sup> See "EFF Says Patent Reform Could Bust its Patent Busting Project", see note 141 above; R Young, see note 1 above.

<sup>139</sup> See further B Kahin, see note 109 above; B Kahin, see note 108 above; Lemley, D Lichtan, B Sampat, "What to do About Bad Patents" available at [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=869826](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=869826) (accessed 24 March 2010); B Perens, see note 18 above; J Rantanen, see note 19 above; P S Abril, R Plant, see note 21 above; C V Chien, see note 20 above; B L Smith, S O Mann, see note 11 above; see further [http://weblog.ipcentral.info/archives/2006/08/what\\_lemley\\_would\\_do\\_with\\_patents\\_and\\_open\\_source.html](http://weblog.ipcentral.info/archives/2006/08/what_lemley_would_do_with_patents_and_open_source.html); EFF, see note 1 above.

<sup>140</sup> See M A Lemley, C Shapiro, see note 11 above; M A Lemley, D Lichtan, B Sampat, see 143 above; [http://weblog.ipcentral.info/archives/2006/08/what\\_lemley\\_would\\_do\\_with\\_patents\\_and\\_open\\_source.html](http://weblog.ipcentral.info/archives/2006/08/what_lemley_would_do_with_patents_and_open_source.html); B Kahin, see note 26 above; B Kahin, Standards and Patents revised September 2007, EFF, see note 1 above; M Reitzig, J Henkel, C Heath, see note 11 above; B L Smith, S O Mann, see note 11 above; see also D W Opperbeck see note 11 above; D S Evans, A Layne-Farrar, see note 20 above; C V Chien, see note 20 above; W M Schuster, see note 104 above; J Rantanen, see note 19 above; P S Abril, R Plant, see note 21 above; S E Abraham, see note 19 above; V Atal, T Bar, see note 104 above; A Tindell, see note 19 above; K D Rowe, see note 19 above; W C Rooklidge, A G Barker, see note 10 above; J R Allison, M A Lemley, A Walker, see note 9 above; C Shapiro, see note 10 above J M Golden, see note 19 above; G N Magliocca, see note 23 above; R M Whitmeyer, see note 23 above; M A Lemley, C Shapiro, see note 10 above; D Myers, see note 18 above; A Chuang, see note 10 above; G

of challenging the numerous software patents, it is a small affirmation that the court may upon closer evaluation invalidate a patent. Recently one of the ‘patents that were requested for re-examination was upheld to be invalid, NeoMedia’s mobile phone barcodes was upheld as invalid by the US Patent and Trademark Office’.<sup>141</sup> Notably, it may be that the Patent Busting Project is a proactive way to help resolve the conflict between the open source and software patents, but there needs to be a more feasible approach to software patents when considering reforms. There appears to be a disparaging gap between patent owners of software technologies and users within the open source community. The conflict in the crossover between software technology and patent owners is exemplified by circumstances in which companies make it a business of applying for software patents, and then using them to threaten other companies who unknowingly use the software technology with patent infringement.<sup>142</sup> While this may be viewed as unethical or amoral behaviour, the legal construct of patent law has enabled the unscrupulous practice of patent farming, trolling and the like through various cases discussed in this paper. The US courts have power to make decisions, which would and could restrict the increasingly expanding rights of patent owners.<sup>143</sup> Perhaps there is hope for suitable reform, however in an industry where technology is highly profitable, many companies acquire their revenue from litigation threats, and compulsory license fees and royalties.<sup>144</sup> It is costly to even defend any litigation suit but patent litigation can cripple any small business where there is an overwhelming power imbalance for bargaining in the software patent and open source arena.<sup>145</sup> There have been many organisations similar to the EFF that have tried to combat and overcome this software patent problem, which has only served to highlight the issue.<sup>146</sup> No such resolution exists other than reforming the patent system. The argument against the patenting of software within the patent system is, however, superficial. It is not simply a matter of assigning the blame, rather it is a political animal that overflows in economic, innovation and social areas, which only

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H Gardella, E A Berger, see note 11 above; D Durie, M A Lemley, see note 11 above; G C Yang, see note 28 above; G R Vetter, see note 11 above; R C Dreyfus, see note 11 above; J L Reed, see note 11 above; J Farrell, C Shapiro, see note 11 above; S W Graf, see note 11 above; D Lichtman, M A Lemley, see note 48 above; R J Mann, see note 67 above; D L Burk, M A Lemley, see note 83 above.

<sup>141</sup> J Brownlee, “EFF Busts Another Lousy Patent”, available at <http://gadgets.boingboing.net/2008/07/21/eff-busts-another-lo.html> (accessed 24 March 2010).

<sup>142</sup> See “Patent Risks of Open Source Software”, see note 116 above; Kahin B, see note 26 above; B Perens, see note 18 above; see also J E Cohen, M A Lemley see note 9 above; M Vailimaki, V Oksanen, see note 106 above.

<sup>143</sup> EFF, see note 1 above; For further discussion see M A Lemley, see note 126 above; See commentators Lemley, with Shapiro in various articles such as “Patent Hold up and Royalty Stacking” see note 11 above; Kahin B, see note 136 above; B Kahin, “Patents and Diversity in Innovation” see further “Open source software: opportunity or threat?”, available at <http://www.iusmentis.com/computerprograms/opensourcesoftware/opportunity-threat/> (accessed 24 March 2010).

<sup>144</sup> See “Patent Risks of Open Source Software”, see note 116 above; “Open source software: opportunity or threat?”, see note 147 above; G C Yang, see note 28 above; G R Vetter, see note 11 above.

<sup>145</sup> See “Patent Risks of Open Source Software”, see note 116 above; G C Yang, see note 28 above; G R Vetter, see note 11 above.

<sup>146</sup> See “Patent Risks of Open Source Software”, see note 116 above; G C Yang, see note 28 above; G R Vetter, see note 11 above.



serve to control users and maintain the monopoly of a right which would not normally be granted.<sup>147</sup>

## 6. Moving Forward

The EFF Patent Busting Project is effective in its current form; its success is however limited by the donations and contributions that are provided by the community. Further, there are projects similar to the EFF Patent Busting Project such as the End Software Project which is run by the Free Software Movement. These groups have similar objectives: to end software patents that are invalidly granted. One suggestion is that, considering these projects have similar if not the same goals, they should unite and establish a stronger group. Despite their different philosophical viewpoints, the objectives of the open source and free software movements are similar. In order to re-balance the interests between patent owners and technology innovation, there must be reconciliation between the patent rights and user rights with respect to software patents. The current position is that unsubstantiated claims are being granted as software patents by USPTO and this has only further aggregated the problem.

The US patent system and patent law is emulating copyright law, where there is a massive divide between copyright owners and users. Although patent reform is imminent, the form it will take remains to be seen. If it is anything like the copyright reforms, then the technology industry and innovation will be oppressed. Further, these will have significant consequences for users as well as developers, individuals and businesses.

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<sup>147</sup>See also commentators, Stallman, End Software Patents project; B Perens, “Public Policy Area: Open Source Software”, available at <http://perens.com/policy/open-source/> (accessed 30 October); B Kahin, see note 26 above; “Patent Risks of Open Source Software”, see note 116; M A Lemley, see note 126 above.