

# A NEW PARADIGM FOR INTELLECTUAL PROPERTY RIGHTS IN SOFTWARE

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## ABSTRACT

*A Winter 2004 article by Bradford L. Smith and Susan O. Mann of Microsoft published in The University of Chicago Law Review suggests that the development and growth of the software industry in the U.S. is a direct outgrowth of the implementation of intellectual property regimes, specifically copyright and patent, with respect to software in the late 1970s and early 1980s. This paper suggests that such patents were neither the sole nor the principal factor for the development of the software industry, that concerns about patents manifested prior to or soon after their application to software have proven true, and that patents are, in fact, not serving the interests of either the U.S. software industry or the consuming public. To that end, this paper advances recommendations for reforming the U.S. patent system as well as consideration of a new schema for protecting software.*

He who receives an idea from me receives instruction himself without lessening mine; as he who lights his taper at mine, receives light without darkening me.

- Thomas Jefferson (1813)

## THE SMITH-MANN ARTICLE

¶1 Bradford Smith, Microsoft's General Counsel, and Susan Mann, also of Microsoft, wrote an article published in 2004 entitled *Innovation and*

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*Intellectual Property Protection in the Software Industry: An Emerging Role for Patents*<sup>2</sup> that discusses the role of intellectual property in the growth of the software industry over the past 25 years. Yet the article totally ignores all of the other factors that contributed to and, more importantly, invited the growth of a standalone commercial software industry. Specifically, the article makes no mention of the development of the personal computer and its role in triggering the demand for off-the-shelf software. Not only did patents *not* cause the launch and rapid growth of the mass market software industry, they have played no significant role in causing that industry to grow as most software patents have been issued long since the industry was established. As seen in [Table 1](#),<sup>3</sup> the escalation of patent filings by Microsoft did not occur until 1994, long after the company had become well established and was being investigated for its monopolistic practices. In fact, contrary to what Smith and Mann suggest, today software patents are widely recognized as a threat to the freedom to innovate within the software industry.

#### EARLY CONCERNS ABOUT SOFTWARE PATENTS

¶2 Long before the U.S. Patent and Trademark Office began recognizing software patents in 1983, the National Commission on New Technological Uses of Copyrighted Works (CONTU), a commission chartered by Congress in 1975 to study, among other things, copyrights and computer software, concluded: “Even if patents prove available in the United States, only the very few programs which survive the rigorous application and appeals procedure could be patented.”<sup>4</sup>

¶3 Even Bill Gates recognized that software patents may prove to be problematic when, in 1991, he stated in a memorandum:

“If people had understood how patents would be granted when most of today's ideas were invented, and had taken out patents, the industry would be at a complete standstill today. . . . I feel certain that some large company will patent some obvious thing related to interface,

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<sup>2</sup> Bradford L. Smith and Susan O. Mann, *Innovation and Intellectual Property Protection in the Software Industry: An Emerging Role for Patents*, 71 U. CHI. L. REV. 241 (2004).

<sup>3</sup> Table 1 is available at the end of this iBrief.

<sup>4</sup> FINAL REPORT OF THE NATIONAL COMMISSION ON NEW TECHNOLOGY USES OF COPYRIGHTED WORKS (July 31, 1978), available at <http://digital-law-online.info/CONTU/PDF/index.html> [hereinafter “CONTU”].

object orientation, algorithm, application extension or other crucial technique.”<sup>5</sup>

¶4 Think of it for a second. Had software patents been around since 1975, the following inventions would have been subject to patents for the better part of the last 20 years: (a) WordStar, the first PC-based word processor released in 1979; (b) VisiCalc, the first PC-based spreadsheet program released in 1979; and (c) Harvard Graphics, the first PC-based presentation graphics program released in 1983. Where would we be today had we been locked into only those choices? Needless to say, Microsoft Office would not be ubiquitous. Interestingly, Dan Bricklin, one of the inventors of VisiCalc, regularly writes and speaks today about the problem with software patents.<sup>6</sup> In 1991, when Bill Gates made his remarks, Microsoft had fewer than 50 filed patent applications; today Microsoft has over 4,000 issued patents and more than 10,000 pending patent applications.<sup>7</sup>

#### TRIVIAL SOFTWARE PATENTS

¶5 CONTU's speculation that “only the very few programs which survive the rigorous application and appeals procedure could be patented” has proven far from correct.<sup>8</sup> Compare the number of patents that have been filed in two key areas in the last 22 years, pharmaceuticals and software. If one examines the principal patent class in which pharmaceutical patents are registered (U.S. class 514), one finds that in a 22-year stretch almost 80,000 pharmaceutical patents have been issued.<sup>9</sup> These pharmaceutical patents account for the billions of dollars of income and thousands, if not tens of thousands, of drugs that have come to market during that time. However, during that same period, the software industry, which has been equally as strong financially throughout that period, has acquired more than 150,000 patents<sup>10</sup> on various forms of software or, more

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<sup>5</sup> Bill Gates, *Challenges and Strategy*, (May 16, 1991), available at [http://discuss.sarahsbookstores.com/Bill\\_Gates\\_Challenges\\_And\\_Strategy\\_Memo](http://discuss.sarahsbookstores.com/Bill_Gates_Challenges_And_Strategy_Memo).

<sup>6</sup> Dan Bricklin, *Patents and Software*, at <http://www.bricklin.com/patentsandsoftware.htm> (last viewed October 8, 2004).

<sup>7</sup> As identified by searching Microsoft, as assignee, against the U.S. Patent and Trademark database utilizing the patent and patent application advanced search functions found at <http://www.uspto.gov/patft/index.html>.

<sup>8</sup> CONTU *supra* note 4.

<sup>9</sup> As identified by searching the Current U.S. Classification for Class 514 against the U.S. Patent and Trademark database utilizing the patent and patent application advanced search functions found at <http://www.uspto.gov/patft/index.html>.

<sup>10</sup> Based on all patents issued in classes 345, 700-707 and 715-717, which cover the bulk of software patents, as identified by searching the Current U.S.

specifically, software features, even though pharmaceuticals had a significant head start; more than 75% of those software patents have a filing date of 1994 or after.

¶6 That is not a complete picture because many of those pharmaceutical patents cover the same drugs. A further comparison is worthwhile. Compare the number of pharmaceutical patents required to protect a couple of blockbuster drugs to the number of patents obtained by one company on one selected software feature—the positioning and/or movement of a cursor. Pfizer's blockbuster, multi-billion dollar Viagra is covered by just one patent.<sup>11</sup> Similarly, just one patent covered Merck's blockbuster, multi-billion dollar Zocor.<sup>12</sup> By comparison, Microsoft has 14 separate patents on the positioning and movement of a cursor,<sup>13</sup> and they have two additional applications pending on it.<sup>14</sup> Rather than producing broad innovations to advance the software industry, like the earlier-mentioned inventions such as the word processor, spreadsheet, or presentation graphics, information is being sliced and diced to the point that every trivial combination or extension of prior software technology is being accorded the same protection as a groundbreaking drug. In the summer of 2004, when Bill Gates announced that Microsoft would be increasing its annual patent filings from 2,000 to 3,000 per year, it was notable that there was no corresponding 50% increase in Microsoft spending for research and development. In fact, contrary to the strong correlation shown in [Table 1](#) among Microsoft's revenue, R&D spending, and patent applications filed between 1994 and 1999, the rate of increase in Microsoft patent filings will now outstrip growth in revenue or R&D. In other words, the block of cheese is the same size; the slices are simply thinner.

¶7 It should be evident that this system of protecting software is not the root cause of innovation in the software industry. Microsoft is a prime

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Classification for these classes against the U.S. Patent and Trademark database utilizing the patent and patent application advanced search functions found at <http://www.uspto.gov/patft/index.html>.

<sup>11</sup> As identified by searching the term “Viagra” utilizing the search tool found at <http://www.fda.gov/cder/ob/docs/querytn.htm>.

<sup>12</sup> As identified by searching the term “Zocor” utilizing the search tool found at <http://www.fda.gov/cder/ob/docs/querytn.htm>.

<sup>13</sup> As identified by searching Microsoft as assignee and the term “cursor” in the title of issued patents against the U.S. Patent and Trademark database utilizing the patent advanced search functions found at <http://www.uspto.gov/patft/index.html>.

<sup>14</sup> As identified by searching Microsoft as assignee and the term “cursor” in the title of patent applications against the U.S. Patent and Trademark database utilizing the patent application advanced search functions found at <http://www.uspto.gov/patft/index.html>.

example of patents significantly trailing, rather than leading, innovation and fiscal success. Patents having played no meaningful role in the first 10 years of Microsoft's life as a public corporation. Contrast this with the pharmaceutical industry. A competitor for one of those major drugs only had to identify three patents to ascertain whether they were infringing and only had to work around those three patents if they chose to compete. By contrast, the software industry is producing thousands upon thousands of inherently meaningless software patents of dubious value, each a potential threat to innovation and competition. And, whereas each of Pfizer and Merck undoubtedly spent hundreds of millions of dollars in bringing Viagra and Zocor to market, the cost of filing and prosecuting the average software patent far outweighs any economic value such patent will produce, or the cost of producing the so-called invention. One has to speculate whether the sole purpose of such increases in patent filings is simply to substitute a legal monopoly for an illegal one.

#### INVALID SOFTWARE PATENTS

¶8 It is bad enough that software patents are being filed at an astounding rate for such trivial matters, but the lack of scrutiny such patents receive, is telling as well. Software patents are not the only class of patents that are vulnerable to reexamination and invalidation; patents of all classes are highly vulnerable to such assertions. In their report entitled *Empirical Evidence on the Validity of Litigated Patents*, John R. Allison and Mark A. Lemley of the University of Texas examine patent validity opinions from an 8-year period through 1996.<sup>15</sup> They found that fully 46% of all patents litigated were invalidated.<sup>16</sup> When only software patents were considered, a third were invalidated.<sup>17</sup> This comes as no surprise to anyone who has spent time reviewing software patents. The lack of an established and easily accessible body of prior art, reduced standards of non-obviousness, and pressure on the USPTO examiners to meet prosecution performance statistics have all contributed to this condition.

#### SOFTWARE PATENTS – INNOVATION OR A BARRIER TO ENTRY?

¶9 The problems presented by software patents and their negative impact on innovation have not gone unnoticed. As pointed out in their paper entitled *The Software Patent Experiment*, James Bessen and Robert Hunt argue that there is reasonable evidence to show that software patents

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<sup>15</sup> John R. Allison & Mark A. Lemley, *Empirical Evidence on the Validity of Litigated Patents*, 26 AIPLA Q.J. 185, 205-206 (1998), available at [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=118149](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=118149).

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

<sup>17</sup> *Id.* at 17.

are not inducing innovation.<sup>18</sup> They found that established firms obtain most software patents and to a greater degree than established firms in other industries. Interestingly, they also found a negative correlation between increases in a firms' software patent focus and their R&D intensity, suggesting that such established firms are substituting software patents for R&D. This is born out further by Bessen and Hunt in their finding that:

“[Where companies are assembling large portfolios of software patents, such] firms may compete to tax each others' inventions and in the process reduce their competitors' incentive to engage in R&D. The outcome of patent litigation and licensing agreements often depends on the size of the firm's patent portfolio. This creates an incentive to build larger patent portfolios, especially when the firm focuses on patents as a competitive strategy. In this account, firms choose to compete in court, rather than in the marketplace.”<sup>19</sup>

¶10 They go on to hypothesize:

“During the early 1980s, patents were relatively costly to obtain, and this might have discouraged substitution away from R&D and toward strategic patenting. By the mid 1990s, software patents became a relatively inexpensive way to expand patent portfolios. This may have increased the attractiveness of a strategy that emphasizes patent rights over a strategy based on R&D. Such a change in strategy would be particularly attractive to mature firms if their R&D labs are not as productive as they once were.”<sup>20</sup>

¶11 In a 2004 research report prepared by Deutsche Bank Research, the authors discuss the issue of Germany's lag in introducing technology innovation.<sup>21</sup> While the report calls for properly valuing intellectual property as one step in increasing innovation, it also calls for “a balanced IP protection regime to foster the creation and flow of ideas,” going on to state that “stronger IP protection is not always better. Chances are that patents on software, common practice in the US and on the brink of being legalised in Europe, in fact stifle innovation. Europe could still alter course.”<sup>22</sup> Citing

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<sup>18</sup> JAMES BESSEN & ROBERT M. HUNT, THE SOFTWARE PATENT EXPERIMENT, 2 (Research on Innovation Working Paper, 2004), *available at* <http://www.researchoninnovation.org/softpat.pdf>.

<sup>19</sup> *Id.* at 14-15.

<sup>20</sup> *Id.* at 15.

<sup>21</sup> DEUTSCHE BANK RESEARCH, INNOVATION IN GERMANY: WINDOWS OF OPPORTUNITY, (June 22, 2004), *available at* <http://www.dbresearch.com/servlet/reweb2.ReWEB?rwkey=u435967&%24rwrframe=0>.

<sup>22</sup> *Id.*

the findings and suggestions of a study by James Bessen and Eric Maskin.<sup>23</sup> Deutsche Bank recommends favoring copyright protection over patent protection for software as a means of maintaining a more level playing field and attracting and inviting innovation from the sector that historically has produced it—the small- and medium-sized enterprise. It is significant that Europeans are recognizing the flaws in the U.S. system.

¶12 This sentiment is further echoed in the August 2004 report by PricewaterhouseCoopers for the Dutch Ministry of Economic Affairs entitled *Rethinking the European ICT Agenda*.<sup>24</sup> In that report, PricewaterhouseCoopers states:

“There are particular threats to the European ICT [Information and Communication Technology] industry such as the current discussion on the patent on software. The mild regime of IP protection in the past has led to a very innovative and competitive software industry with low entry barriers. A software patent, which serves to protect inventions of a non-technical nature, could kill the high innovation rate.”<sup>25</sup>

¶13 In another empirical study reported by Petra Moser of MIT in the 2003 paper entitled *How Do Patent Laws Influence Innovation? Evidence From Nineteenth-Century World Fairs*,<sup>26</sup> Moser finds no evidence that patent laws increased levels of innovative activity. Rather, he reveals strong evidence that patent systems influenced the distribution of innovative activity across industries. In fact, evidence presented by Moser substantiates the contention that countries without patent laws were just as innovative as those with strong patent protection. Moser’s findings are further supported in Bronwyn Hall’s 2003 paper, *Business Method Patents, Innovation and Policy*.<sup>27</sup> Hall reaches two conclusions: “(1) there exists a unique standard of nonobviousness that maximizes the rate of innovation in

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<sup>23</sup> JAMES BESSEN & ERIC MASKIN, SEQUENTIAL INNOVATION, PATENTS, AND IMITATION (Dept. of Econ., Mass. Inst. of Technology, Working Paper No. 00-01, 2000), available at <http://www.researchoninnovation.org/patrev.pdf>.

<sup>24</sup> DIRECTORATE-GENERAL FOR TELECOMMUNICATIONS AND POST, THE NETHERLANDS MINISTRY OF ECONOMIC AFFAIRS, *RETHINKING THE EUROPEAN ICT AGENDA*, (Aug. 2004) available at [https://www.ictstrategy-eu2004.nl/pdf/Rethinking\\_the\\_European\\_ICT\\_agenda\\_def.pdf](https://www.ictstrategy-eu2004.nl/pdf/Rethinking_the_European_ICT_agenda_def.pdf).

<sup>25</sup> *Id.* at 50.

<sup>26</sup> PETRA MOSER, *HOW DO PATENT LAWS INFLUENCE INNOVATION? EVIDENCE FROM NINETEENTH-CENTURY WORLD FAIRS*, (Nat’l Bureau of Econ. Research, Working Paper No. 9909, 2003), available at <https://www.nber.org/papers/w9909>.

<sup>27</sup> BRONWYN HALL, *BUSINESS METHOD PATENTS, INNOVATION, AND POLICY*, (Econ. Dept., University of California, Berkeley, Working Paper E03-331, 2003), available at <http://repositories.cdlib.org/iber/econ/E03-331/>.

a given industry; and (2) contrary to the conventional wisdom, reductions in the nonobviousness requirement are more likely to encourage innovation in industries that innovate slowly than in industries that innovate rapidly.”<sup>28</sup> She goes on to state: “The implication is that in rapidly innovating industries where each new product builds on others, welfare is more likely to be enhanced by having a high hurdle for obtaining a patent.”<sup>29</sup> Clearly, this defines the state of the software industry.

#### CROSS-LICENSING – THREATENING START-UPS

¶14 Problems are not limited to the patenting process and the stifling of innovation resulting solely there from. Most of these same information technology companies, who have aggressively pursued thousands of software patents, have also entered into cross-license agreements with each other. As feudal lords, they have no interest in internecine fighting among themselves, so they promise not to sue each other for patent infringement. Everybody else is left on the outside looking in, including all of the small start-ups that are, more often than not, the source of true innovation in the software industry.

¶15 Why are these cross-licenses so valuable to the major players and why are they threatening to the small and medium businesses? In part it is the sheer cost of patent litigation. Practitioners in the field of patent litigation will tell you it is some of the most expensive litigation to which a party can be exposed. An industry rule of thumb is that any patent infringement lawsuit will easily cost \$1.5 million in legal fees alone to defend.

¶16 The licensing of software patents has become an industry unto itself. IBM took an early lead when it recognized that its vast portfolio of patents was not producing any direct income. Led by the efforts of Marshall Phelps, IBM began an aggressive campaign of “suggesting” that other companies pay for a license to IBM's broad patent portfolio. Such “suggestions”, while often based on specific patents, often proved sufficiently intimidating simply by the sheer size of IBM's portfolio. These efforts paid off for IBM. In the year 2000 alone IBM generated more than \$1.6 billion in intellectual property licensing income.<sup>30</sup> IBM has been roundly criticized for its aggressive licensing practices,<sup>31</sup> and now those

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<sup>28</sup> *Id.* at 7.

<sup>29</sup> *Id.* at 8.

<sup>30</sup> Elisa Barton, *Big Blue's Big Brother Lab*, WIRED NEWS, (Apr. 24, 2001), at <http://www.wired.com/news/technology/0,1282,43186,00.html>.

<sup>31</sup> Gary L. Reback, *Patently Absurd*, FORBES.COM, (Jun. 24, 2002), at <http://www.forbes.com/asap/2002/0624/044.html>.

practices have been adopted by Microsoft with its hiring of IBM's former head of intellectual property licensing, Marshall Phelps.

#### SOFTWARE IP – DENYING INNOVATION, DENYING CHOICE

¶17 Today in the U.S. information industry, we are observing the building of an iron curtain of intellectual property. It is an iron curtain built with bricks consisting of thousands upon thousands of weak and oftentimes invalid software patents. It is an iron curtain built with the mortar of cross-license agreements that protect large patent holders at the expense of the small start-up. It is an iron curtain built on a foundation of non-disclosure that runs directly contrary to the purpose set forth in the Constitution for the granting of copyrights and patents. It is an iron curtain intended to keep customers walled in and competitors walled out. It is an iron curtain erected to deny freedom—freedom of choice.

¶18 Some might wonder what is fundamentally wrong with this. Although a few of these companies have gotten into hot water in the past over antitrust violations, are they not simply taking advantage of the law? Many have purportedly established these large patent portfolios for defensive purposes, solely to protect themselves from the threats of others, despite the fact that they have eliminated the majority of the greatest threats through cross-licensing.

¶19 The problem, in part, lies in the assumption that patent law, as presently applied to software, is infallible. The application of patents to software has only been in place since the early 1980's. Early on, concerns were expressed that by forcing software into a patent regime we were shoving the proverbial square peg in a round hole. One must ask whether such uses, or abuses, are not running afoul of the very foundation of our patent system, the U.S. Constitution. While granting these limited duration and scope monopolies, the Constitution clearly recognized there was a higher purpose to be served, i.e., the advancement of science and the useful arts. We have now established a patent system for protecting software that is failing to promote that progress.

#### THE IMMEDIATE REMEDY - EUROPE

¶20 There are, however, solutions available, both immediate and long-term, that are applicable in the U.S. and abroad. An early lead is being taken in Europe as the European Commission and European Parliament work to establish a uniform system for software patents (more properly, computer-implemented inventions) across the European Union.<sup>32</sup> While the

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<sup>32</sup> See Proposal for a Directive of the European Parliament and of the Council on the Patentability of Computer-Implemented Inventions, COM(02)92 final, available at <http://www2.europarl.eu.int/oeil/file.jsp?id=219592>.

final result of this legislative process remains uncertain, what is certain are some of the amendments that are likely to be incorporated into the legislation. First is the definition of the term “technical contribution” as it is incorporated into the legislation. A narrow definition of this term, along the lines of its interpretation to date by the courts of Germany, will eliminate the vast majority of business method patents and will restore a substantial non-obviousness test to software patents. The second is the addition of a statutory protection of the right to create interoperable products. Should those amendments be adopted, the European legislation will have gone a long way toward addressing some of the more severe problems inherent in the U.S. patent system.

#### THE IMMEDIATE REMEDY – U.S.

¶21 One source of immediate remedies is set forth in the FTC report *To Promote Innovation: The Proper Balance of Competition and Patent Law and Policy*,<sup>33</sup> in which the FTC recommends the following changes to our patent system:

- Creation of a new administrative procedure to allow post-grant review of and opposition to patents;
- Specify that challenges to the validity of a patent must only meet the test of a “preponderance of the evidence” rather than the current standard of “clear and convincing evidence;”
- Tightening of the legal standards used to evaluate whether a patent is “obvious”, placing a greater burden on the patent holder to show that “commercial success” is an indicator of non-obviousness as well as the connection between the claimed invention and such commercial success, as well as giving greater credence to whether the invention was suggested to one of ordinary skill in the art, i.e., the “suggestion” test;
- Providing the resources and policies and procedures to permit greater and more thorough review of patents and greater disclosure by applicants;

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<sup>33</sup> FEDERAL TRADE COMMISSION, TO PROMOTE INNOVATION: THE PROPER BALANCE OF COMPETITION AND PATENT LAW AND POLICY (Oct. 2003), available at <http://www.ftc.gov/opa/2003/10/cpreport.htm>.

- Giving consideration to possible harm to competition before extending the scope of patentable subject matter;
- Requiring the publication of all patent applications 18 months after filing, not just those that are also subject to international filings; and
- A tightening of the standards for willful infringement.

¶22 Another source for proposed patent reform is the National Academy of Science (NAS) report *A Patent System for the 21st Century*.<sup>34</sup> In addition to addressing some of the proposals advanced by the FTC, the NAS recommends: (a) strengthening the USPTO's capabilities; (b) shielding some research uses of patented inventions from infringement liability; (c) limiting the subjective elements of patent litigation; and (d) harmonizing the U.S., European, and Japanese patent examination systems.

¶23 A third source of suggestions is the USPTO report *The 21st Century Strategic Plan*.<sup>35</sup> While primarily focused on improvements in the operation of the USPTO, this report acknowledges that statutory and rule changes are also necessary if the patent system is to meet its essential purpose.

¶24 Finally, there is the report from the National Innovation Initiative (NII) entitled *Innovate America – Thriving in a World of Challenge and Change*<sup>36</sup> which states that: “A balanced legal regime that both protects the rewards of intellectual property and facilitates the spread of open standards is one of the requisites for an American Innovation Century.”

¶25 Among the problems cited in the NII report are the issuance of inappropriate and poor quality patents, tension between the spread open standards and traditional IP protection, and the need for limits on infringement remedies.

¶26 Even Brad Smith, General Counsel of Microsoft, has called for a number of these reforms, as well as greater harmonization around the world. This is an area on which Brad and this author agree. Specifically, this author advocates:

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<sup>34</sup> A PATENT SYSTEM FOR THE 21ST CENTURY (Stephen Merrill et al. eds., 2004) available at <http://www.nap.edu/html/patentsystem/>.

<sup>35</sup> U.S. PATENT & TRADEMARK OFFICE, THE 21<sup>ST</sup> CENTURY STRATEGIC PLAN (Feb. 3, 2003), available at <http://www.uspto.gov/web/offices/com/strat21/>.

<sup>36</sup> NATIONAL INNOVATION INITIATIVE, COUNCIL ON COMPETITIVENESS, INNOVATE AMERICA – THRIVING IN A WORLD OF CHALLENGE AND CHANGE, (July 23, 2004), available at [http://www.compete.org/pdf/NII\\_Interim\\_Report.pdf](http://www.compete.org/pdf/NII_Interim_Report.pdf).

- Non-diversion of PTO fees;
- Third-party participation in the patent examination process;
- Post-grant oppositions;
- Challenges to the validity of patents to be based on a “preponderance of the evidence,” not “clear and convincing evidence” standard;
- Restoration of the once-strong non-obviousness standard;
- A higher threshold in finding willful infringement;
- A higher threshold before granting injunctive relief;
- Publication of all patent applications after 18 months;
- Harmonization with Europe to narrow the scope of what is patentable in the software and business method arenas as well as assuring the right to interoperability.

#### LOOKING AT THE LONG-TERM

¶27 The patent system in the U.S. today as applied to software is not inducing innovation; innovation in the software industry occurs despite the patent system. The system of intellectual property protection for software is so fundamentally broken that one prominent industry official, Andy Grove, chairman of Intel, has stated the U.S. “needs to revamp not just the patent system, but the entire system of intellectual property law.”<sup>37</sup>

¶28 The recommendations for reforming the patent system are all within the realm of possible and necessary. At the same time, we should not assume that, even as modified and improved, the application of patent law to software is inherently the best or most logical means of protecting the interests of the developing party. Perhaps we should consider a new paradigm that is specifically designed for software and incorporates the best elements of both patents and copyright. Some characteristics of such a paradigm could include:

- a shorter term of protection (5-7 years would maintain the speed of innovation);

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<sup>37</sup> Jonathan Krim, *Patenting Air or Protecting Property?*, WASH. POST, Dec. 11, 2003, at E01, available at <http://www.washingtonpost.com/ac2/wp-dyn/A54548-2003Dec10>.

- protection only for complete systems or features, not components (avoids the trivial);
- strong protection (reward first movers);
- published source code (allows knowledge to advance);  
and
- interoperability.

¶29 Compared to other forms of art covered by either patent or copyright, software is still in its infancy. Let us not assume that a regime that protected other forms of art is suitable to software. Let us not assume that the *Diamond*<sup>38</sup> and *State Street*<sup>39</sup> courts were correct in permitting the application of patents to software. It is time to reexamine their conclusions and determine whether an alternative regime would be more appropriate. The future of the U.S. software industry may depend on it.

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<sup>38</sup> *Diamond v. Diehr*, 450 U.S. 175 (1981).

<sup>39</sup> *State St. Bank & Trust Co. v. Signature Fin. Group*, 149 F.3d 1368 (Fed. Cir. 1998), *cert. denied*, 525 U.S. 1093 (1999).

**Table 1**

