Obviousness with Business Methods

David Schumann

Follow this and additional works at: http://repository.law.miami.edu/umlr

Recommended Citation
Available at: http://repository.law.miami.edu/umlr/vol56/iss3/8
Obviousness with Business Methods

TABLE OF CONTENTS

I. INTRODUCTION ...................................................... 727
II. THE PATENT SYSTEM ................................................ 734
   A. Constitutional Basis for a Patent System .......................... 735
   B. Statutory Requirements for Patent Grant .......................... 737
       (1) Utility, 35 U.S.C. § 101 .................................... 738
       (2) Business methods ............................................. 743
       (3) Novelty, 35 U.S.C. § 102 .................................... 746
       (4) Non-obvious subject matter, 35 U.S.C. § 103 ................ 749
III. HISTORICAL DEVELOPMENT OF NON-OBVIOUSNESS .......... 751
IV. THE FEDERAL CIRCUIT AND ITS VIEW OF OBITOUSNESS ....... 758
   A. Supreme Court Review of Federal Circuit Cases ............... 759
   B. Differing Standards of Review ................................ 759
   C. Combining Prior Art References ................................ 760
   D. Federal Circuit Solutions ....................................... 763
V. BUSINESS METHODS AND THE UNITED STATES PATENT OFFICE 763
   A. USPTO Initiatives ................................................ 764
   B. Budget Restrictions ............................................ 765
   C. Patent Examiner Staffing ....................................... 766
   D. Patent Office Standard for Non-obviousness .................. 766
   E. Combination of Prior Art References at the Patent Office .... 767
VI. PROTECTION AGAINST BAD BUSINESS METHOD PATENTS .... 768
   A. Reexamination .................................................... 768
   B. First Inventor Defense Act of 1999 ............................ 768
   C. Business Method Improvement Act of 2000 .................... 768
VII. CONCLUSION ....................................................... 770

I. INTRODUCTION

In State Street Bank & Trust Co. v. Signature Financial Group, Inc., the Court of Appeals for the Federal Circuit clarified the absence of a proscription on patents for business methods. In the short period of time since the State Street decision, the number of applications filed for business method patents has steadily increased. In fact, the total number of applications filed for business method patents remains under one percent of total patent filings, and the rate of rejection of business method applications is significantly greater than for other technologies.

1. 149 F.3d 1368 (Fed. Cir. 1998).
2. Id. at 1375.
4. Id.
Nonetheless, many commentators and industry watchdogs are predicting the effect of the growing number of business method patents as catastrophic.\textsuperscript{6}

The noted internet law authority Lawrence Lessig believes that business method patents will ultimately harm innovation on the Internet.\textsuperscript{7} Lessig warns of dire consequences should this trend continue, finding it "the single greatest threat to innovation in cyberspace."\textsuperscript{8} Greg Aharonian, a well known "patent-busting" consultant,\textsuperscript{9} describes the new business method patent movement as "a cold war," and dismisses such patents as "just people playing legal games."\textsuperscript{10} Even Vint Cerf, who actually co-invented the Internet while at DARPA,\textsuperscript{11} has said that he believes that a number of the business method and software patents "appear to be patents for what is well-known, widely known technology that every undergraduate knows."\textsuperscript{12}

Similarly, members of Congress have expressed concerns over the recent deluge of grants of business method patents.\textsuperscript{13} While introducing a bill\textsuperscript{14} that would limit the protection afforded by business method patents, Representative Rick Boucher of Virginia summarized the sentiment among the technology community: "Not surprisingly, there has been a great deal of concern in the high-tech community that the continued award of business method patents could lead to a significant amount of wasteful litigation, could stifle the development of new technology,


\textsuperscript{7} James Gleick, \textit{Patently Absurd}, N.Y. Times Magazine, Mar. 12, 2000, at 46. Interesting, ten days before the publication of \textit{Patently Absurd}, Q. Todd Dickinson called the editors of the \textit{N.Y. Times} and then the \textit{Times'} lawyers in an attempt to block the publication, indicating the subject matter was particularly sensitive to him. \textit{See} comments on \textit{Patently Absurd} by the author, James Gleick, available at http://www.around.com/patent.html.


\textsuperscript{9} Gleick, \textit{supra} note 8, at 47.

\textsuperscript{10} Defense Advanced Research Projects Agency.

\textsuperscript{11} Internet Society Panel on Business Method Patents, \textit{supra} note 5.


and could retard the development of the internet.”

Echoing similar sentiments, Representative Howard Berman from California (Representative Boucher’s co-author on the bill), questioned both the “quality and appropriateness of the number of recently granted [business method] patents.”

An especially dramatic example of the changing attitudes toward business method patents is demonstrated by the outcry over Amazon.com, Inc.’s “One-Click” patent. The patent covers a method and system for purchasing items on the Internet using only a single action, such as the click of a mouse. In 1998, Amazon founder and co-inventor of the One-Click patent, Jeff Bezos, noted that a major competitor, Barnes & Noble, had implemented a similar system called “Express Lane” on their website. Because the patent for One-Click had not yet been granted, Bezos filed a “petition to make special,” the Patent Office equivalent of an expedite order. Almost a year later, on September 28, 1999, the United States Patent and Trademark Office (“PTO”) granted U.S. Patent Number 5,960,411 to Amazon.com, Inc. On December 1, 1999, during the height of the holiday shopping season, the United States District Court for the Western District of Washington awarded Amazon.com an injunction against Barnes & Noble, requiring Barnes & Noble to insert an extra mouse click into its ordering process.

In the months following the decision, the high-technology community manifested its outrage using a number of vehicles. For example, Richard Stallman of the Free Software Foundation instituted a boycott of Amazon.com and requested that other web sites link to his boycott web page. A San Francisco organization called NoWebPatents.org devoted their website to another boycott, and kept running totals of the lost customers and sales resulting from the boycotts. Tim O’Reilly, publisher of computer software books and an Internet pioneer, posted an open on-line letter to Jeff Bezos asking Bezos to abandon the One-Click

18. Id.
19. Gleick, supra note 8, at 44.
23. Id. at 1249.
patent to the public in the interest of preserving the pace of Internet innovation. O'Reilly authored the open letter in response to requests from consumers to stop selling his own books on Amazon.com. Additionally, O'Reilly gathered 10,000 signatures for the open letter before ending the call for signatures.

Responding not only to O'Reilly, but also to calls from the high-tech community calling for the unilateral abandonment of Amazon’s patents, Bezos penned his own open letter, explaining that his ethical, legal, and fiduciary responsibilities to the company precluded abandonment. In a stark contrast to that position, Bezos joined forces with O'Reilly and Charles Cella in October 2000 to establish a web site called Bountyquest.com. The site allows “hunters” to win monetary awards for supplying documentation that would invalidate patents listed on the site. This documentation, generally known as prior art, would include anything demonstrating that the patented method was described in a printed publication, in use, or on sale before the patented invention was invented, or at least one year before the filing of the application for the patent. Ironically, one of the first postings was Bezos's own One-Click patent.

The One-Click patent is one of a large number of questionable business method and software patents. For instance, the PTO recently granted Amazon.com, Inc. a patent for its affiliate program. This patent basically provides for a system where affiliates market items from the Amazon.com catalog and are rewarded with a commission on each sale. Entitled “Internet Based Customer Referral System,” the scheme undoubtedly sounds familiar to hordes of sales professionals across the country. Amazon’s implementation of the affiliate program, however, may be the first time the process had been applied to the

27. Internet Society Panel on Business Method Patents, supra note 5.
31. Id.
33. Id. See also http://www.bountyquest.com.
35. Id.
36. Id.
Indeed, the act of applying an existing business method to a computer or to the Internet is a focus of much of the criticism directed at business method patents. A sampling of a few questionable patents includes: Open Market's "Electronic Shopping Cart" and Network Sales System; Double-Click's method for delivery of advertisements; Netcentive's patent providing for a system to award frequent buyer points; Trilogy's method for allowing purchasers to select options for items they purchase over the Internet, such as cars; and Priceline's method for the on-line purchase of airline tickets using a reverse auction.

For example, Priceline.com is illustrative of the problems with computer-implemented, business method patents. The process referred to in the Priceline.com patent is known as a reverse Dutch auction where a plurality of sellers have the option of accepting the offered price. Many commentators, and indeed many laypeople, have argued that this patent has been granted for a system that has been around for centuries. Therefore, the question arises, how can someone get a patent for something they did not invent? Moreover, since the only difference seems to be the addition of the computer, is not this invention an obvious modification of a centuries old practice?

Additionally, Priceline.com illustrates a burgeoning business in the acquisition of intellectual property. Priceline.com started as a subsidiary of Walker Digital, Inc. Walker Digital is a company that procures patents for business systems it develops in house:

Walker Digital's strategy is to identify significant, unresolved busi-
ness process problems and customer needs; invent proprietary new business method systems that solve those problems, and then unlock the value of our business systems through licensing of our technologies . . . We take existing and digital technologies, especially the internet, and apply them to these new customer solutions.\textsuperscript{49}

Whether a company like Walker Digital would have existed before \textit{State Street} is questionable.\textsuperscript{50} Even conventional companies, however, have realized the importance of acquiring intellectual property, particularly patents.\textsuperscript{51}

Because a patent gives the owner or assignee the right to exclude others from using\textsuperscript{52} the patented device for twenty years,\textsuperscript{53} companies have been able to extract large revenues in the form of license fees, and can also barter for the use of another company’s patented technology through cross-licensing agreements.\textsuperscript{54} In contrast, in the context of business method patents, acquisition of patent rights has also become somewhat a defensive strategy.\textsuperscript{55} According to Greg Blonder, a longtime researcher and vice president at Bell Labs, “[A]s to my own business-process patents, well, as long as everyone in town is carrying a gun, I have to be armed as well.”\textsuperscript{56} The phenomenon, which requires Internet businesses to procure patents or purchase licenses, has been described by many commentators as a sort of private tax on business that effectively takes away resources from research and development.\textsuperscript{57} Innovation is therefore stifled where resources are diverted to the patent problem.

Furthermore, the very nature of software and Internet development provides for a difficult model for patent protection.\textsuperscript{58} Unlike other types of invention, software and Internet development occur both iteratively

\begin{footnotes}
\footnote{50. Merges, \textit{supra} note 47, at 579.}
\footnote{51. Gleick, \textit{supra} note 8, at 46.}
\footnote{52. See 35 U.S.C. § 271 (2000). This section also prevents others from making, using, selling, offering to sell any patented invention without authority and prohibits the importation of any patented invention into the United States.}
\footnote{54. Gleick, \textit{supra} note 8, at 48. Gleick estimates the revenues in the United States for licensing alone to be $100 billion. IBM alone has received well over $1 billion in licensing fees last year.}
\footnote{55. Id. at 49.}
\footnote{56. Id.}
\footnote{57. Internet Society Panel on Business Method Patents, \textit{supra} note 5. See also Gleick, \textit{supra} note 8, at 46.}
\footnote{58. Pamela Samuelson, et al., \textit{Toward a Third Intellectual Property Paradigm: A Manifesto Concerning the Legal Protection of Computerprograms}, 94 \textsc{Colum. L. Rev.} 2308, 2331 (1994).}
\end{footnotes}
Software development typically is a mixture of old and new elements and sometimes employs exclusively well-known elements. Software developers rarely create new products in isolation or from scratch. Software and Internet developers build on existing technology through a highly evolved system of sharing or a borrowing of ideas. Finally, much of this prior art that is borrowed cannot be found in existing patents or even published. In what Representative Berman described as "folk knowledge," prior art may be handed from person to person orally, in chat rooms, or even by e-mail. Additionally, a programmer may acquire knowledge of prior art by working with others on teams, through exchanges at conferences, or by reading electronic bulletin boards. Many of these sources, however, will not be revealed through a traditional search of prior art.

Many commentators believe that the existing patent system is an inappropriate vehicle for protecting software and business method inventions, while others believe the system could be made more effective through modifications. This Comment will examine the requirements for obtaining a computer-implemented business method patent, and focus specifically on the most troubling and unsettled area as applied to computer-implemented business methods: Non-obviousness. The Comment will demonstrate why Non-obviousness remains the last real test to determine whether an invention is worthy of patent protection, and how impotent that standard has become with regard to computer-implemented business methods. This Comment will argue that the adoption of a presumption that those skilled in the art of computer and internet programming are inherently motivated to combine references will greatly improve the quality of computer-implemented business method patents.

Part II will discuss the patent systems in general, including the con-

59. Id. at 2345-47. See also Internet Society Panel on Business Method Patents, supra note 5.
60. Samuelson, et al., supra note 58, at 2332.
62. Id. See also Internet Society Panel on Business Method Patents, supra note 5.
64. Samuelson, et al., supra note 58, at 2330. There are also many software code exchanges on the World Wide Web where developers share information by contributing or downloading modules of software code. See generally Netlib Repository, at http://www.netlib.org.
stitutional basis and statutory requirements for obtaining the patent right. Part II will demonstrate why obviousness is the most problematic criteria in evaluating computer-implemented business methods. Part III traces the development of the modern-day obviousness standard, from its common law beginnings through codification to the present day. Part IV discusses the Federal Circuit's view on the obviousness standard and examines potential differences in interpretation between the Supreme Court's view and the Federal Circuit implementation.

In Part V, the Comment will discuss the examining practices at the Patent and Trademark Office and, specifically, how applications are examined in light of the obviousness standard. The motivation of the Patent Office will be analyzed by examining recent initiatives and federal funding issues. Part VI will examine the special considerations applicable to business method patents. Part VI will demonstrate the problems with the current standards for obviousness used by the Federal Circuit and Patent and Trademark Office and suggest why very few applications for business method patents will ultimately be rejected for obviousness. Additionally, Part VI will examine the arguments regarding why business method patents may be bad for business and innovation, the changes applicable to business method patents made to the Patent Act by the American Inventor's Act of 1999, and the possible impact of the Business Method Improvements Act bill, currently before Congress.

Part II begins by examining the patent systems in general, including the constitutional basis and the statutory requirements for obtaining a patent right.

II. THE PATENT SYSTEM

A patent is a right granted by the federal government to an inventor. Patents sometimes are viewed as a contract between the inventor and the United States government. Other sources analogize a patent to a deed, like those used in real estate transactions. Similar to a deed, a patent gives the inventor or his assignee the right to exclude others from making, selling, or using his invention for a limited period of time. For example, the current term of the right for a utility patent is twenty years from the effective filing date of the patent application. After the

term expires, the public is free to use or, in patent parlance, "practice" the invention. Reflective of the balance between granting an exclusive right and encouraging innovation for the public benefit, a person seeking a patent must make a full and adequate disclosure of his invention.

An inventor can also assign his patent to another person or entity, thereby relinquishing his rights completely. While a patent owner or assignee may grant other parties a license to make or use the invention, the patent owner or assignee is neither under a duty to license the patent to others, or even to make use of the invention himself. In practice, however, patent owners and assignees will generally make every effort to exploit their patent rights. Furthermore, the United States patent system is unique in that only the inventor may apply for a patent, and the priority rules award the patent to the first-to-invent, as opposed to the first-to-file systems used in most other countries. The focus on the inventor in the United States reflects a desire to reward individuals according to the level of their contributions, and not their social status.

A. Constitutional Basis for a Patent System

The United States Patent and Trademark system is rooted in the United States Constitution itself: Article I, section 8, clause 8 gives Congress express authority "[t]o promote the Progress of Science and the useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries." This clause has been interpreted as providing for both a federal patent system and a federal copyright system. Moreover, the clause is unusually specific, directing Congress to establish an "exclusive Right" for "limited Times," as well as describing the purpose for such a system: "[T]o promote the Progress of Science and the useful Arts." Conventionally, interpretations of the patent clause utilize the "balanced sentence" technique, popular among eighteenth century prose writers. Using the balanced sentence scheme, "Science" is logically

73. Id. at 3.
75. ALBERT, JR., supra note 69, at 386.
76. Id.
77. DONNER, supra note 72, at 4.
80. See In re Shao Wen Yuan, 188 F.2d 377, 380 (C.C.P.A. 1951).
related to "Authors" and "Writings," while "the useful Arts" logically relates to "Inventors" and "Discoveries." 83 Thus, while the clause gives Congress the power to establish a system granting inventors rights to their discoveries, rights can only be granted for those discoveries that "promote the Progress of . . . the useful Arts." 84

The Supreme Court has interpreted this clause as providing Congress with a grant of power along with a limitation of that power. 85 In Graham v. John Deere, the Court interpreted the purpose of Article I, section 8, clause 8 as a limitation of Congress in its exercise of the patent power. 86 Congress may not "enlarge the patent monopoly without regard to the innovation, advancement, or social benefit gained thereby . . . Innovation, advancement, and things which add to the sum of useful knowledge are inherent requisites in a patent system which by constitutional command must 'promote the Progress . . . of the useful Arts.'" 87

Consider, for example, the mere substitution of materials. In Hotchkiss v. Greenwood, 88 Hotchkiss had obtained a patent for door-knobs where clay or porcelain was substituted for other conventional materials, such as metal and wood. 89 Hotchkiss brought suit for infringement against Greenwood. The Supreme Court invalidated the patent because the mere substitution of one commonly known material for another lacked "that degree of skill and ingenuity which constitute essential elements of every invention." 90

The patent system is designed to encourage invention by rewarding inventors with an exclusive right, but the grant of an exclusive right (or monopoly) must be balanced against the value of the invention or advancement to the public. 91 Where the proposed invention is a simple substitution of existing and well known materials, the comparatively low value of the invention to the public is easily discouraged by the weight of the exclusive right to be granted to the applicant for the patent. Therefore, by constitutional mandate, Congress cannot create a system granting patents where there is simply no innovation or advancement.

Similarly, the Deere Court articulated a second important limitation on the patent power stemming from the purpose of promoting the useful arts. The Court stated that "Congress may not authorize the issuance of

83. Id. at 1426.
86. Id. at 9.
87. Id. at 6.
89. Id. at 264.
90. Id. at 267.
patents whose effects are to remove existent knowledge from the public domain, or to restrict free access to materials already available.\textsuperscript{92} For instance, a party could not today be awarded a patent on an invention that was fully described in a printed publication in 1999.\textsuperscript{93} Were a patent granted in such a situation, the patentee could prevent the author of the article from using his own invention, discouraging publication of new discoveries and inventions for fear of theft. In this scenario, rather than encouraging innovation and advancement, inventors would be more inclined to keep their inventions secret, providing no public benefit.

With the constitutional limitations in mind, Congress promulgated the Patent Act of 1790.\textsuperscript{94} This act created the Department of State headed by the Secretary of State, the office of the Secretary of the Department of War, and the Attorney General. Any two of these individuals could grant patents for a term of fourteen years to any petitioner who “invented or discovered any useful art, manufacture, . . . or device, or any improvement therein not before known or used,” provided that “the invention or discovery was sufficiently useful.”\textsuperscript{95} Nevertheless, the first patent board confronted difficulty in determining which things were of sufficient worth to the public, and therefore worthy of a patent, and which were not.\textsuperscript{96} Amidst efforts by the first patent board to create specific criteria for determining what inventions are worthy of a patent, Thomas Jefferson suggested that the federal judiciary was better suited to develop a set of standards and conditions for patentability.\textsuperscript{97} Congress apparently agreed, and although between 1790 and 1950 the Patent Act has been modified, amended, or revised more than fifty times, Congress has steered clear of defining a statutory set of requirements other than the Utility and Novelty tests codified today respectively as 35 U.S.C. § 101 and 35 U.S.C. § 102.\textsuperscript{98}

\section*{B. Statutory Requirements for a Patent Grant}

The Patent Act of 1952\textsuperscript{99} codified the three basic criteria used today for determining whether an invention can be patented: 35 U.S.C. § 101, Utility; 35 U.S.C. § 102, Novelty; and 35 U.S.C. § 103, Non-Obviousness. The first two tests, Utility and Novelty, have not been substan-

\textsuperscript{92} Id. at 6.
\textsuperscript{93} See 35 U.S.C. § 102(b) (1994).
\textsuperscript{94} The Patent Act of 1790, ch. 7, 1 Stat. 109 (1790) (repealed 1793).
\textsuperscript{95} Id.
\textsuperscript{96} John Deere, 383 U.S. at 9.
\textsuperscript{97} Id. at 10.
\textsuperscript{98} Id.
ially changed from the tests appearing in the Patent Act of 1793. The third test, Non-Obviousness, was originally a judicial doctrine created in *Hotchkiss v. Greenwood,* and further developed until it was incorporated into the Patent Act of 1952. In keeping with Jefferson's contention that the judiciary was better suited to develop more specific guidelines, the three basic statutory provisions remain general, and courts have subjected them to varying interpretations.

(1) **UTILITY,** 35 U.S.C. § 101

The first statutory requirement for obtaining a patent, Utility, is based largely upon the constitutionally mandated purpose of promoting the useful arts. Section 101 of Title 35 of the United States Code, entitled “Inventions Patentable,” unsurprisingly sets out various categories of patentable inventions. The text states that “Whoever invents or discovers a new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.” Courts have not had many problems defining the latter three categories of patentable inventions, but the first category, process, has proven more difficult to implement in practice.

With regards to software, the courts’ approach to § 101 seemed to be dominated by determining whether the invention fit into any of the latter three categories: machine, manufacture, or composition of matter. A “process” is defined in the Patent Act as a “process, art, or method and includes a new use of a known process, machine, manufacture, composition of matter, or material.” A software invention, however, when claimed as a process, can indistinguishable from a mathematical algorithm.

For instance, consider the 1972 United States Court of Customs and Patent Appeals case of *Gotchalk v. Benson,* where Benson attempted to patent a method of converting binary coded decimal numbers ("BCD") into pure binary format. Here, the process claims were not

---

104. *Id.*
105. See Durham, *supra* note 82, at 1428.
108. Parker v. Flook, 437 U.S. 584, 589 (1978) ("The line between a patentable ‘process’ and an unpatentable ‘principle’ is not always clear.").
110. *Id.* at 65.
limited to any particular art or technology, or even any particular end use. In fact, the claims covered any use of the claimed method in a general purpose digital computer. The Court observed:

The conversion of BCD numerals to pure binary numbers can be done mentally through the use of the foregoing table. The method sought to be patented varies from the ordinary arithmetic steps a human would use by changing the order of the steps, changing the symbolism for writing the multiplier use in some steps, and by taking subtotals after each successive operation. The mathematical procedures can be carried out in existing computers long in use, no new machinery being necessary. And, as noted, they can also be performed without a computer.

To issue a patent for this invention would, in effect, pre-empt the mathematical formula converting BCD numbers to binary numbers, thereby prohibiting others from using the formula without license. Furthermore, in what would become known as the mental step doctrine, the Benson Court reiterated the long standing principal that “[p]henomena of nature, though just discovered, mental processes, and abstract intellectual concepts are not patentable, as they are basic tools of scientific and technological work.”

Six years later, in 1978, the Supreme Court had another opportunity to examine the patent eligibility question regarding software inventions in Parker v. Flook. Unlike Benson, where the invention was not directed toward a particular apparatus or end use, the claims in Flook operated to adjust alarm limits in a catalytic converter apparatus. Flook argued that his invention did not pre-empt the mathematical formula because the formula had uses outside the catalytic conversion process that remain in the public domain. Additionally, the Flook claims differed from the invention in Benson in that they contained more than just the mathematical formula or algorithm; the claims also described so-called “post-solution” activity, namely the adjustment of the alarm limit according to the formula. Despite these differences from Benson, the Court held the invention was unpatentable because to permit a patent to be issued here would allow careful draftsman to patent

111. Id. at 64.
112. Id. at 67.
113. Id. at 72.
117. Benson, 409 U.S. at 64.
118. Flook, 437 U.S. at 585.
119. Id. at 590.
120. Id.
ideas and phenomenon of nature previously prohibited by including "post solution" activity. The Court held "[t]he rule that the discovery of a law of nature cannot be patented rests, not on the notion that natural phenomenon are not processes, but rather on the more fundamental understanding that they are not the kind of discoveries that the statute was enacted to protect." According to the Flook Court, laws of nature are not new, but have always existed and thus are not eligible for patent protection under the Utility Standard in 35 U.S.C. § 101. The Court did not completely foreclose the use of mathematical algorithms or laws of nature in patentable inventions however. One must now claim inventive application of the mathematical algorithm or law of nature.

Flook highlights the problem of attempting to isolate one of the three basic criteria for the grant of a patent. In Flook, the Court rejects the claim as unpatentable principally because the "chemical process involved in catalytic conversion of hydrocarbons are well known, as are the practice of monitoring the chemical process variables, the use of alarm limits to trigger alarms, the notion that alarm limit values must be recomputed and reajusted . . ." In his dissent, Justice Stewart argues that the majority's reasoning is based more squarely on Novelty, 35 U.S.C. § 102, and Non-obviousness, 35 U.S.C. § 103, than on patent eligibility, 35 U.S.C. § 101. In Justice Stewart's view, the question before the Flook Court was whether a claimed process looses its status as patentable subject matter under 35 U.S.C. § 101 because one step of the process would not be patentable if considered in isolation. While the majority would seem to agree that the claims must be read as a whole, they characterize the "process as unpatentable under § 101, not because it contains a mathematical algorithm as one component, but because once than algorithm is assumed to be within the prior art, the application, considered as a whole, contains no patentable invention."

If the invention is found within the prior art, i.e. the invention was already made prior to Flook's discovery, then it would be said to be anticipated by the prior art, and thus be unpatentable under 35 U.S.C. § 102, Novelty. Although 35 U.S.C. § 101 includes language requiring that the invention be "new and useful," Flook illustrates the diffi-

---

121. Id. at 593.
122. Id.
123. Id. at 593 n.15.
124. Id. at 594.
125. Id.
126. Id. at 598-600 (Stewart, J., dissenting).
127. Id. at 599.
128. Id. at 594.
129. Id.
faculty in determining the proper balance between 35 U.S.C. § 101 and 35 U.S.C. § 102, a question that would not be answered by the Supreme Court until 1980 in Diamond v. Chakrabarty.131

While Chakrabarty did not involve a software issue, the case established the proper weight to be given to 35 U.S.C. § 101 in rejecting an invention as unpatentable subject matter. In Chakrabarty, the inventor had created human-made, genetically engineered oil eating bacterium that would break down multiple components of crude oil.132 The claims encompassed a process for producing the bacteria, a method for using the bacteria, and a claim for the bacteria in and of itself.133 The patent examiner rejected the claim for the bacteria based on two arguments: (1) micro-organisms are "products of nature"; and (2) as living things, they are not patentable subject matter under 35 U.S.C. § 101.134 In rejecting these arguments and declaring the claim for the bacteria patentable, Chief Justice Burger used a liberal interpretation of 35 U.S.C. § 101: "In choosing such expansive terms as 'manufacture' and 'composition of matter,' modified by the comprehensive 'any,' Congress plainly contemplated that the patent laws would be given wide scope."135 Although the Court did not suggest that 35 U.S.C. § 101 has no limits, the Chakrabarty opinion suggest a much more expansive view of patentable subject matter and places more emphasis on 35 U.S.C. § 102, Novelty, and 35 U.S.C. § 103, Non-obviousness, for inventive criteria.

In 1981, the Supreme Court finally laid to rest any remaining legal arguments against the patentability of computer programs. In Diamond v. Diehr,136 the invention was claimed as a process for curing synthetic rubber, which included the execution of a mathematical formula via a digital computer and program software designed to effect a perfect cure.137 The patent examiner had rejected the claim on the basis of the Court's reasoning in Gottchalk v. Benson,138 that the mathematical algorithm performed on a computer under the control of a stored program constituted non-statutory subject matter under 35 U.S.C. § 101.139
Diehr differed from Benson, however, in that the Diehr application claims covered the entire process of curing synthetic rubber, not just the equation to determine the proper cure time.\textsuperscript{140} In contrast, the Benson claims covered the equation (or algorithm) used to convert the BCD numbers to binary numbers, not specifically related to any particular end result or apparatus.\textsuperscript{141} For similar reasons, Diehr is not inconsistent with Flook.\textsuperscript{142} There, the inventor sought to claim a method for computing an alarm limit, i.e. a number, which was basically a mathematical formula.\textsuperscript{143}

The Diehr Court determined the key difference between Benson, Flook, and Diehr to be whether the patent claims seek to pre-empt the mathematical formula or algorithm, or whether the claims only seek to foreclose others from using the equation in conjunction with all the other steps in their particular process.\textsuperscript{144} The Diehr application made use of a well known equation called the Arrhenius equation,\textsuperscript{145} but the claims contained many other required steps encompassing the invention.\textsuperscript{146} Recalling Flook and Benson, then-Justice Rehnquist clarified the early precedents stating, "[o]ur earlier opinions lend support to our present conclusion that a claim drawn to subject matter otherwise statutory does not become nonstatutory simply because it uses a mathematical formula, computer program, or digital computer."\textsuperscript{147} Moreover, in a foreshadowing of the bulk of future inventions, Rehnquist continued, "[i]t is now commonplace that an application of a law of nature or mathematical formula to a known structure or process may well be deserving of patent protection."\textsuperscript{148} The Court concluded that due to the presence of the other steps in the claims, Diehr did not seek to pre-empt the use of the equation, and thus the application covered patentable subject matter.\textsuperscript{149} Significantly, the Court focused on the fact that the formula in question was part of an industrial process.\textsuperscript{150}

Finally, Diehr also sought to clarify the relevant considerations under 35 U.S.C. § 101, further eroding Utility as a road block to patent protection. The Court found that "[s]ection 101 . . . is a general statement of the type of subject matter that is eligible for patent protection

\begin{footnotes}
\footnotetext{140}{Id. at 187.}
\footnotetext{141}{Benson, 409 U.S. at 64.}
\footnotetext{142}{Parker v. Flook, 437 U.S. 584 (1978).}
\footnotetext{143}{Diehr, 450 U.S. at 186.}
\footnotetext{144}{Id. at 187.}
\footnotetext{145}{Id. at 177-78.}
\footnotetext{146}{Id. at 181 n.5.}
\footnotetext{147}{Id. at 187.}
\footnotetext{148}{Id.}
\footnotetext{149}{Id. at 187-88.}
\footnotetext{150}{Id. at 193.}
\end{footnotes}
Even though the language in that section contains references to "new and useful," the novelty of the invention, or any step or element of an invention for that matter, is irrelevant in determining whether the subject matter of a claim is patentable therein. Thus, the Court validates the view of Justice Stewart's *Flook* dissent, creating a broad interpretation of what subject matter is patentable under 35 U.S.C. § 101 and placing greater emphasis on 35 U.S.C. § 102, Novelty, and 35 U.S.C. § 103, Non-obviousness, as the gatekeepers to patent protection.

After *Diehr*, the courts were left with only a few categories that constituted non-patentable subject matter: "laws of nature, natural phenomenon, and abstract ideas." Similarly, the Court held that since mathematical algorithms are considered abstract ideas, they, by themselves, are not patentable subject matter. When reduced to some kind of practical application that creates a "useful, concrete, and tangible result," then mathematical algorithms can be part of the claimed invention.

There was one additional category not addressed in *Diehr*, however, that much of the patent community believed was not eligible subject matter: business methods.

(2) BUSINESS METHODS

Although cases involving business methods had existed before 1908, the business method exception seems to have first entered the jurisprudential lexicon in *Hotel Security Checking Co. v. Lorraine Co.* The invention in *Hotel Security Checking* was a system of checks and accounting registers designed to prevent waiters from pocketing both their tips and the dining charge. The actual rejection of the patent may have stemmed more from a novelty problem than from a specific rejection of business methods. The Court held that "[t]he fundamental principal of the system is as old as the art of bookkeeping, i.e., charging the goods of the employer to the agent who takes them." The genesis of the business method exception is found in another part of the *Hotel Security Checking* opinion: "A system of transacting business discon-

151. *Id.* at 189.
152. *Id.* at 188.
155. *In re Allapat*, 33 F.3d 1526, 1544 (Fed. Cir. 1994).
157. 160 F. 467 (2d Cir. 1908).
158. *Id.* at 467.
159. *Id.* at 469. The Non-obviousness standard, 35 U.S.C. § 103, was enacted with the 1952 Patent Act. Although *Hotel Security Checking* might have been an example of an appropriate obviousness rejection, that statutory authority did not exist until forty-four years later.
connected from the means for carrying out the system is not within the most liberal interpretation of the term, [patentable subject matter]." But until 1998, judges, lawyers, and commentators were divided on the existence of the business method exception.

For instance, in his article “Useful Arts” in the Information Age, Professor Alan Durham takes the position that there is no constitutional basis for the grant of a patent for a business method: “There is no corresponding evidence that the Framers intended to encourage developments in business methods, political strategies, pedagogical techniques, or similar undertakings . . . If the Framers had entertained such unconventional thoughts . . . one might expect some explicit statement to that effect either in the Constitution or in the early patent acts.” The concept of a business method exception as invalid was so pervasive, that until 1996, the United States Patent and Trademark Office’s Manual of Patent Examining Procedure included Rule 706.03: “Though seemingly within the category of process or method, a method of doing business can be rejected as not being within the statutory classes.”

In contrast, in his recent article on the business method exception, Rinaldo Del Gallo, III, states that “the business method exception is of dubious analytical value. Nearly every case that supposedly invoked this rule simply restated the longstanding proposition that naked ideas, bereft of anything physically inventive, are not patentable.” Furthermore, additional criticism came from Federal Circuit Court Judge Newman in her dissent in the case of In re Schrader. “I discern no purpose in perpetuating a poorly defined, redundant, and unnecessary ‘business methods’ exception, indeed enlarging (and enhancing the fuzziness of) that exception by applying it in this case. All of the ‘doing business’ cases could have been decided using the clearer concepts of Title 35.” Judge Newman also remarked that the court in Hotel Security Checking discussed the “‘obviousness’ of the system of records . . . at considerably greater length than whether the subject matter was

160. Id. The modified position of the Hotel Security Checking quote cited here originally ended with “an art.” Hotel Security Checking Co., 160 F. at 469. However, this case was decided when the precursor to 35 U.S.C. § 101, section 4886 read “any person who has invented or discovered any new or useful art, machine . . .” Act of July 8, 1870, ch. 203, § 24, 16 Stat. 201. That section was modified by the Patent Act of 1952 to read “Whoever invents or discovers any new or useful process . . .” 35 U.S.C. § 101 (1994). Here, the Second Circuit was referring to “art” as it appeared in the section on patentable subject matter.


163. Rinaldo Del Gallo, III, supra note 143, at 404.

164. 22 F.3d 290 (Fed. Cir. 1994).

165. Id. at 298.
finally, in 1998, the Federal Circuit joined Judge Newman’s view and denounced the existence of an exception to 35 U. S. C. § 101 for business methods. In State Street Bank & Trust Co. v. Signature Financial Services Group, Inc., the District Court for the District of Massachusetts had invalidated a patent assigned to Signature because, “as established by a series of older cases, business methods are unpatentable abstract ideas.” In State Street Bank, Signature’s patent covered a data processing system and method for administering a partnership portfolio and partner fund financial services configuration, a Hub and Spoke system, where the Spokes (funds) are invested in a Hub (portfolio). The system determines the share that each fund has in the total portfolio and allocates the daily income, expenses, and loss to each fund. In reversing the district courts decision invalidating the patent, the Federal Circuit made a special effort to “lay this ill-conceived [business method] exception to rest.”

Interestingly, the court suggested that the exception was an application of the “requirement of invention” principal that had been superseded by the enactment of 35 U. S. C. § 103, Non-obviousness, in the Patent Act of 1952. The court found that “[t]he business method exception had never been invoked in a determination of unpatentability.” Similarly, the court noted that the USPTO has removed the rule on business method exceptions, Rule 706.03(a), from the Manual of Patent Examining Procedure in 1996. Furthermore, the 1996 Patent and Trademark Examination Guidelines for Computer Related Inventions instructed examiners against categorizing inventions as “methods of doing business.” The guidelines stated “Claims should not be categorized as methods of doing business. Instead, such claims should be treated like any other process claims.” The business method exception, which once posed a high hurdle for software developers, had been completely vitiated by State Street.

166. Id.
169. Id.
171. Id.
172. Id. at 1377.
173. Id.
175. Id.
The second statutory requirement for an invention to be patentable is Novelty, 35 U.S.C. § 102. Novelty is more specific than Utility or Non-obviousness in that it provides an enumeration of situations where a patent may not be obtained for an invention. The enumerated situations are generally separated into three categories: statutory bar, prior invention, and miscellaneous. The statutory bar sections, § 102(b) and § 102(d), deal with situations where the invention to be patented has been on sale, published, or in public use for more than one year prior to the date of filing of the patent application. The prior invention categories, sections § 102(a), § 102(e), and § 102(g) describe situations where the item to be patented has been invented by someone else, published, used, or placed on sale before the patent has applicant conceived of the invention. The third category is a miscellaneous category that includes all the residual subsections of 35 U.S.C. § 102 that do not fit into the first two categories. For example, § 102(f) prevents a person from obtaining a patent if he did not, in fact, invent the subject matter described in the application. A person is barred from obtaining a patent under § 102(c) for an invention he has abandoned. The central theme unifying all three categories is a limitation of the grant of a patent to those inventions that are indeed novel, or new.

The Novelty requirement has special application in the United States patent system, which is predicated on a first-to-invent concept, as opposed to a first-to-file system. In a first-to-file system, which predominates in most other countries, patents are awarded to the first individual (or in some cases first entity) to file an application for a patent. In contrast, in a first-to-invent system, a patent can only be obtained by the individual who first invents a process, machine, manufacture, com-

---

177. See id. "A person shall be entitled to a patent unless . . ." Id. (emphasis added).
184. See generally 35 U.S.C. § 102(a), (e), (g), (h) (1994). See also Wigley, supra note 180.
186. Id.
188. Wigley, supra note 180, at 585.
190. MARTIN J. ADelman et. al., CASES AND MATERIAL ON PATENT LAW 204 (1998).
position of matter, or improvement thereof.\textsuperscript{191} In the United States' system, where order of filing is not determinative of patent award, ascertaining that the applicant is, in fact, the first inventor is a primary consideration and has generated much litigation notwithstanding the rather objective statutory criteria for Novelty under 35 U.S.C. § 102.\textsuperscript{192}

35 U.S.C. § 102(a) states the general first-to-invent rule used in the United States: "A person shall be entitled to a patent unless . . . the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for patent . . ."\textsuperscript{193} For example, if an inventor filed an application for a patent describing a new microprocessor but the same microprocessor had appeared in a thesis or journal article prior to the date of invention listed by the applicant, then the applicant could not obtain a patent.\textsuperscript{194} This is because the invention claim is said to have been \textit{anticipated} by the thesis or journal article, known in the vernacular as a reference. Similarly, if the same microprocessor had been sold commercially, or publically used before the applicant's date of invention, then the applicant's claims to the microprocessor would also be anticipated; thus, a patent could not be obtained.\textsuperscript{195} A more difficult situation, however, arises where the microprocessor the applicant has claimed is not exactly the same as the microprocessor described in the reference or currently in public use.

The standard for anticipation has two requirements: (1) that the process, machine, manufacture, or composition of matter used in public or described in the publication be \textit{the same} as the claimed invention; and (2) that it be described by a single reference.\textsuperscript{196} "Anticipation under 35 U.S.C. § 102 requires the presence in a single prior art disclosure of each and every element of the claimed invention."\textsuperscript{197} For example, if the microprocessor described in the patent application claimed two registers for making a particular floating point computation, but the microprocessor described in the journal article contained only one such register, then the invention in the application would not necessarily be anticipated by the journal article reference. This is not "anticipation" under § 102 because the reference is missing the additional register for making this particular computation. The reference can still anticipate the invention claimed in the application, however, if the addition of the

\begin{thebibliography}{99}
\bibitem{191} Id.
\bibitem{192} Wigley, \textit{supra} note 180, at 585.
\bibitem{194} \textit{See generally In re Hall}, 781 F.2d 897 (Fed. Cir. 1986).
\bibitem{195} \textit{See generally Gilman v. Stern}, 114 F.2d 28 (2d Cir. 1940).
\bibitem{196} \textit{Lewmar Marine Inc. v. Barient Inc.}, 827 F.2d 744, 747 (Fed. Cir. 1987).
\bibitem{197} Id.
\end{thebibliography}
second register is a minor aspect, or not essential to the Novelty of the invention. This might occur where the second register is only a continuation of the first. In contrast, anticipation would not likely be found where the additional register was an integral part of the invention, such as producing a more efficient computation.

The reason for building some flexibility into the anticipation standard to reach references that do not expressly disclose minor aspects of a claimed invention is two-fold. First, if only minor changes to non-essential parts of an invention disclosed in a prior art reference would save an application from anticipation under 35 U.S.C. § 102, then clever drafting could eviscerate the anticipation standard altogether. “If exact identity were required, § 102(b) would become a paper defense, for then what is earlier put in use with minor changes later could be patented . . . ” Second, where a reference fails to disclose a minor aspect of the claimed invention, some flexibility must be built into the anticipation standard to account for situations “where the common knowledge of technologists is not recorded in the reference; that is where, the technological facts are known to those in the field of the invention, albeit not known to judges.” The latter rationale underlies the concept of “inherency,” where some aspect, not recited in the reference, is inherent to the technology, or process. For example, in Continental Can Co. USA v. Monsanto Co., the invention was a design for making the bottom of plastic bottles stronger by including hollow, rib-like structures. Prior art had been identified where the bottom structure of the plastic bottle was characterized by ribs that appeared solid. Some molding processes produce such a structure as hollow parts, however, a fact commonly known to practitioners of the plastic molding arts. If the molding process used to produce the prior art bottle consistently produced hollow ribs, then the patented invention would be anticipated. Furthermore, the inherency doctrine is very narrow in application and can only be used in limited circumstances, where the inherent characteristic can be established beyond only possibilities and probabilities, a fact that cannot be established at the summary judgment

200. Id.
202. DONNER, supra note 198, at 462.
203. 948 F.2d 1264 (Fed. Cir. 1991).
204. Id. at 1264.
205. Id. at 1268.
206. Id.
207. Id.
The distinction between a reference containing each and every element of the claimed invention, and one containing similar or equivalent elements has widened in the twentieth century. Prior to the Patent Act of 1952, the term anticipation (as it relates to Novelty) was given a much broader meaning: "The pre-1952 cases often used the term 'anticipation' to mean that the subject matter of the claims either was found exactly in prior art (i.e. lacked Novelty) or, though different, was not 'inventive' over the prior art." This latter category was codified in the Patent Act of 1952 as the Non-obvious subject matter standard, 35 U.S.C. § 103. Although post-1952 cases still cling to the old interpretation of "anticipation," prior art that contains similar, but not the same, elements as those claimed in the application for a patent "is more akin to obviousness." Thus, the anticipation aspect of Novelty is becoming a narrower exception to patentability, putting further emphasis on the Non-obviousness subject matter test of 35 U.S.C. § 103.

The third basic condition for patentability is the Non-obviousness requirement codified as 35 U.S.C. § 103:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, 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 the said subject matter pertains.

The Non-obviousness standard prevents patents from issuing on inventions that contain insignificant differences over prior art. As a result of the congressional determination that trivial advances should not be awarded patent protection, the Non-obviousness standard ensures that a patent "may issue only for those literally new solutions that are beyond the grasp of the ordinary artisan who has full understanding of the pertinent art."

Where Novelty leaves off, Non-obviousness continues. Recall that

208. Id. at 1269.
210. Id.
211. Id.
212. Id. at 748.
215. DONALD S. CHISUM, CHISUM ON PATENTS § 5.01 (2001).
to be rejected for lack of Novelty under 35 U.S.C. § 102, the invention
must be substantially identical to that described by a prior art refer-
ence.\textsuperscript{216} Under an obviousness analysis, however, even if the invention
is not identical to that disclosed in the prior art, it still may be rejected
for obviousness if the difference or modification "would have been obvi-
ous . . . to a person having ordinary skill in the pertinent art."\textsuperscript{217} For
example, in \textit{Hotchkiss v. Greenwood},\textsuperscript{218} the patent application claimed a
doorknob with the same design as previous doorknobs, but composed of
clay or porcelain, instead of wood or metal.\textsuperscript{219} Although the substitution
of clay or porcelain was novel, the \textit{Hotchkiss} Court found that the sub-
stitution was obvious:

\begin{quote}
[F]or unless more ingenuity and skill in applying the old method of
fastening the shank and the knob were required in the application of it
to the clay or porcelain knob than were possessed by an ordinary
mechanic acquainted with the business, there was an absence of that
degree of skill and ingenuity which constitute essential elements of
every invention. In other words, the improvement is the work of a
skillful mechanic, not that of the inventor.\textsuperscript{220}
\end{quote}

Furthermore, where Novelty requires that all the elements of a
claimed \textit{invention} be present in a \textit{single} prior art reference, in some cir-
cumstances elements from two or more references can be combined
under an obviousness analysis. In the case of \textit{In re Oetiker},\textsuperscript{221} Oetiker’s
claimed invention, a hose clamp, was rejected by the patent examiner in
light of two references: (1) a patent by Lauro; and (2) a patent previ-
ously filed by Oetiker himself. Oetiker’s invention was in essence, a
mere improvement over his previously filed patent in that it differed by
the presence of a hook designed to disengage automatically when the
clamp is tightened, while the Lauro reference disclosed a hook and eye
fastener used in garments.\textsuperscript{222} The Federal Circuit, however, reversed the
rejection because the references were improperly combined, holding
"[t]here must be some reason, suggestion or motivation found in the
prior art whereby a person of ordinary skill in the field of the invention
would make the combination."\textsuperscript{223} Intriguingly, the court reversed the
rejection notwithstanding the examiner’s apparent belief that a practi-
tioner in the art of hose clamps would naturally look to the garment

\begin{itemize}
  \item \textsuperscript{216} Wigley, \textit{supra} note 180, at 588.
  \item \textsuperscript{217} Graham v. John Deere Co., 383 U.S. 1, 3 (1966).
  \item \textsuperscript{218} 52 U.S. (11 How.) 248 (1851).
  \item \textsuperscript{219} \textit{id.} at 264.
  \item \textsuperscript{220} \textit{id.} at 267.
  \item \textsuperscript{221} \textit{In re Oetiker}, 977 F.2d 1443 (Fed. Cir. 1992).
  \item \textsuperscript{222} \textit{id.} at 1446.
  \item \textsuperscript{223} \textit{id.} at 1447.
\end{itemize}
industry for hook solutions.  

The Federal Circuit, however, disagreed with the Board’s position that all hooking problems are analogous. Judge Newman explained the rationale: “The combination of elements from non-analogous sources, in a manner that reconstructs the applicant’s invention only with the benefit of hindsight, is insufficient to present a prima facie case of obviousness.” Because patent examination is conducted by hindsight, where the invention is necessarily made known to the examiner and the court, the examination process must be protected from the tendency to search the prior art for items that upon examination seem obvious. Therefore, courts confine the combination of references to those situations where the references themselves suggest or teach the combination. Similarly, the references must come from areas of analogous art, for example, in fields where a person of ordinary skill in the art would reasonably be expected to look for a solution.

The In re Oetiker example also highlights another important difference between Novelty and Non-obviousness. Under the Non-obviousness analysis, the prior art must be from an analogous field in order to limit the prejudicial effect of hindsight, whereas prior art under Novelty analysis contains no such constraints, as prior art for purposes of Novelty can come from any field. In her concurring opinion in the case of In re Oetiker, however, Chief Judge Nies cautioned against taking an overly restrictive view of the combination of references under Non-obviousness. The Chief Judge suggested that the court reflect the concept of suggestion or motivation to combine references in terms of “from the prior art” rather than “in the prior art.” In her view, the particular reference relied upon need not specifically contain an express suggestion to combine; rather, the suggestion or motivation to combine two or more references can be derived from the general knowledge of those persons of ordinary skill in the pertinent art.

III. HISTORICAL DEVELOPMENT OF NON-OBSERVABLENESS

Unlike Utility and Novelty, Non-obviousness was not part of the
Patent Act of 1790, nor would it become codified until the Patent Act of 1952. Instead, from 1850 to 1952, the courts employed standards such as "level or standard of invention." This judicially created standard was first described in the 1850 case of Hotchkiss v. Greenwood, where the Supreme Court held that an invention must be more than novel to satisfy the conditions for patentability. The Hotchkiss Court ruled a patent for a new product could only be obtained if the level of skill required was no more than that of a skilled mechanic. The "level of invention test" was followed by most courts, however, it proved to be difficult to apply in practice. As a result, many courts began promulgating "negative rules." These judicially created "negative rules" were for the most part, attempts by the courts to define levels of invention that did not meet the standard required to obtain a patent.

While many court developed these negative tests of inventions, others tried to establish objective standards, albeit with somewhat limited success. For example, in Cuno Engineering v. Automatic Devices Corp., the point of novelty in the invention was the addition of a thermostat to break a circuit in a automotive cigarette lighter. The Court, in an attempt to follow Hotchkiss, found the patent invalid, reasoning that "the new device, however useful it may be, must reveal the flash of creative genius, not merely the skill of the calling." The invention in this case, according to the Court, was analogous to the use of thermostats in toasters, heaters, and irons. Furthermore, the development of the wireless automotive lighter had seen several iterations of patented designs, indicating possibly a crowded field or a lack of a "flash of creative genius."

The Court in Graham v. John Deere noted that the phrase "flash of creative genius" did not actually create a more exacting standard, but merely rhetorically restated that the invention must require something beyond the skill of the calling. Seemingly in response to Cuno Engineering, Congress enacted the second sentence of 35 U.S.C. § 103(a),

234. ADELMAN, ET. AL. supra note 190, at 409.
235. See generally DONALD S. CHISUM, CHISUM ON PATENTS § 5.02 (2001).
236. Wigley, supra note 180, at 588.
238. Wigley, supra note 180, at 588.
239. CHISUM, supra note 235, at § 5.02.
240. Wigley, supra note 180, at 589.
241. 314 U.S. 84 (1941).
242. Id. at 91.
243. Id.
244. Id.
245. Id.
247. Id. at 15 n.7.
which states “Patentability shall not be negatived by the manner in which the invention was made.”\textsuperscript{248} The Reviser’s Note to that section seems to indicate that the intent of the second sentence was to render immaterial the question of whether the invention resulted from a long period of experimentation or from a flash of genius.\textsuperscript{249}

The negative rules of invention came to dominate the judicial standards through the 1950 case of \textit{Great Atlantic & Pacific Tea Co. v. Supermarket Equipment.}\textsuperscript{250} The claimed invention consisted of a cashier’s counter equipped with a rack to push or pull groceries or other items to the checking clerk.\textsuperscript{251} The district court determined that the conception of the counter with the rack considered as a whole, was new and useful although each element of the claimed device had been found in the prior art.\textsuperscript{252} Invalidating the patent, Justice Jackson, writing for the Supreme Court, explained that an aggregation of old elements must create something greater than the sum of the parts.\textsuperscript{253} The Court explained that “The mere aggregation of a number of old parts or elements which, in the aggregation, perform or produce no new or different function or operation than that theretofore performed or produced by them, is not patentable invention.”\textsuperscript{254} Some commentators suggest this was a miscalculation of how science and technology create novel inventions. Nonetheless, the so-called “synergism test” effectively added another category to the list of inventions that did not rise to the level of invention: the mere aggregation of old elements.\textsuperscript{255}

The synergism test drew criticism from Second Circuit Judge Learned Hand. Judge Hand recognized that practically all inventions are a combination of old elements. He stated that “It is idle to say that combinations of old elements cannot be inventions; substantially every invention is for such a ‘combination’: That is to say, it consists of former elements in a new assemblage.”\textsuperscript{256} In the interim, between \textit{Great Atlantic & Pacific Tea Co.} and Judge Hand’s comments in \textit{Reiner v. I. Leon Co.},\textsuperscript{257} Congress passed the Patent Act of 1952. Among other things, the Patent Act of 1952 codified the judicially created Non-obvi-

\textsuperscript{249} \textit{Graham}, 383 U.S. at 16 n.8.
\textsuperscript{250} 340 U.S. 147 (1950).
\textsuperscript{251} \textit{Id.} at 149.
\textsuperscript{252} \textit{Id.}
\textsuperscript{253} \textit{Id.} at 152.
\textsuperscript{254} \textit{Id.} at 151 (quoting Lincoln Eng’g Co. v. Stewart-Warner Corp., 303 U.S. 545, 549 (1938)).
\textsuperscript{255} Wigley, \textit{supra} note 180, at 590.
\textsuperscript{256} \textit{Reiner v. I. Leon Co.}, 285 F.2d 501, 503 (2d Cir. 1960).
\textsuperscript{257} \textit{Id.}
ousness standard at 35 U.S.C. § 103. The legislative history behind § 103 reveals Congress's intent to “stabilize” the protection of inventions and to ensure “uniformity and definiteness” with respect to patent law. Both the Senate and House reports indicate that § 103 was a major change to Title 35, while other portions of the report indicate that it was merely a codification of existing, judicially developed criteria.

Judge Learned Hand believed that the effect of the Patent Act of 1952 was to restore the definition of obviousness announced in Hotchkiss v. Greenwood. In response, Judge Hand reiterated that the objective standard applied to inventions that are combinations of old elements: “All the constituents may be old, if their new concourse would not 'have been obvious ... to a person having ordinary skill in the art.'” Furthermore, in Reiner and an earlier case, Lyon v. Bausch & Lomb, Judge Hand may have planted the seeds of the more objective criteria that would get the Supreme Court’s approval in the 1966 case of Graham v. John Deere.

Lyon involved a coating used on glass lenses. In determining that the invention was not obvious to one of ordinary skill in the art, Judge Hand considered other objective criteria as indicative of Non-obviousness:

The most competent workers in the field had for at least ten years been seeking a hearty, tenacious coating to prevent reflection; there had been a number of attempts, none satisfactory; meanwhile nothing in the implementary arts had been lacking to put the advance into operation; when it appeared, it supplanted the existing practice and occupied substantially the whole field.

Similarly, in Reiner, Judge Hand used similar indicia for the Second Circuit’s analysis of Non-obviousness. In describing the difficulty a judge has in determining what is obvious to one skilled in the art, Judge Hand found some solace in the objective criteria: “There are indeed some sign posts: e.g. how long did the need exist; how many tried to find the way; how long did the surrounding and accessory arts disclose the means; how immediately was the invention recognized as an answer by those who used the variant?” Therefore, in the Second Circuit, to

258. Chisum, supra note 235, at § 5.02[4].
259. Id.
260. Id.
262. Id.
265. Lyon, 224 F.2d at 530.
266. Id. at 535.
267. Reiner, 285 F.2d at 504.
demonstrate that an invention was Non-obvious, an inventor could use extrinsic evidence such as a long felt need, failure by others to find a solution, or rapid adoption of the new invention by the market.

The Second, Third, Fourth, and District of Columbia Circuits had adopted Judge Hand's interpretation of the Non-obviousness standard as codified by the Patent Act of 1952. Conversely, the First, Fifth, Sixth, Eighth, and Ninth Circuits took the position that the statute was merely a codification of existing case law at the time, which included Great Atlantic & Pacific Tea Co.'s proscription of combination patents. This division of authority on the interpretation of 35 U.S.C. § 103 led the Supreme Court to grant certiorari on not one, but three cases concerning Non-obviousness after a fifteen year absence from review of the subject. In a series known to practitioners as "the trilogy," the Supreme Court heard the cases of Graham v. John Deere, Calamar v. Cook Chemical Co., and United States v. Adams to answer the following questions: "[(1) W]hat effect the 1952 Act had upon traditional statutory and judicial tests of patentability[;] and [(2) W]hat definitive tests are now required." Graham involved an improvement to shank plows that was essentially a combination of old elements that the Eighth Circuit rejected because, in a flashback to the rationale of Great Atlantic & Pacific Tea Co., the combination produced no new result. On the other hand, in Calamar v. Cook Chemical Co., where the invention related to a plastic sprayer combined with a lid that held the sprayer in a position suitable for transport, the Eighth Circuit found the combination patent non-obvious in light of the evidence that the invention "fulfilled a long felt need with an economical, efficient, utilitarian apparatus which achieved novel results and immediate commercial success." Underscoring the need for Supreme Court review, not only were conflicting opinions being generated by different circuits, but here the Court confronted conflicting opinions exclusively within the Eighth Circuit.

Although recognizing that the validity of the two patents would turn on facts of each case, the Supreme Court articulated a general
approach to Non-obviousness. Ultimately invalidating both the Graham and Cook Chemical Co. patents, the Court offered guidelines for Non-obviousness analysis under 35 U.S.C. § 103:

Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or non-obviousness of the subject matter is determined.

While the circuits that followed Judge Hand’s view generally believed that the enactment of 35 U.S.C. § 103 was intended to relax the standards required to obtain a patent, the Court specifically rejected this position stating:

We find no change in the general strictness with which the overall test is to be applied. We have been urged to find in § 103 a relaxed standard, supposedly a congressional reaction to the “increased standard” applied by this Court over the past 20 or 30 years. The standard has remained invariable in this Court.

The Court further suggested that the appearance of a stricter standard was a result of the rapid advance of technology, causing particular fields of science to become more crowded with inventions. Thus, under the existing Non-obviousness standards, more prior art exists in each particular field, making patenting a non-obvious invention more difficult, while the actual standard has remained substantially the same.

Accordingly, the Graham Court also addressed the use of objective indicia such as those used by Judge Hand in Reiner and Lyon. The Court held that “Such secondary considerations as commercial success, long felt but unresolved needs, failure of others, etc. might be utilized to give light to the subject matter sought to be patented. As indicia of Obviousness or Non-obviousness, these inquires have relevancy.”

Furthermore, the Court commented that use of the secondary consideration will aid the judiciary in determination of the primarily technological inquiry into obviousness, and therefore guard against the use of hindsight to incorrectly find obviousness. Therefore, the use of the secondary consideration is not intended to be ultimately dispositive, but is

278. Id.
281. Id. at 18.
282. Id.
283. See id. at 17-18.
284. Id.
285. Id. at 36.
merely designed to serve as a guide, or thumbnail check, to indicate whether an invention is potentially non-obvious. 286

In contrast, the companion case of United States v. Adams appears to have turned on the consideration of secondary criteria. 287 Adams’s patent described a non-rechargeable battery comprised of two electrodes, one made of magnesium, the other of cuprous chloride, submerged in an aqueous electrolyte solution. 288 Although each of the elements of the Adams battery could be found in the prior art, their combination was deemed to be non-obvious by one skilled in the art, since the inventor had to ignore known deficiencies in existing battery technology, and combine these components notwithstanding the industry teaching against such a combination. 289 The three other factors that weighed heavily in the Court’s opinion were: (1) the disbelief of experts in the field that the Adams’s battery could achieve such results; (2) the patent office’s finding of only one reference to cite against Adams’s application, despite the crowded nature of the field of battery invention; and (3) the unexpected results that far surpassed then existing wet-batteries. 290 The first two factors are analogous to the Graham’s secondary considerations; the third factor, however, where the combination of elements produced an unexpectedly better result, appears to be closer to the synergism standard developed in Great Atlantic & Pacific Tea Co.

Only a short time later, in 1969, the Supreme Court had another opportunity to test the Non-obviousness standard in Anderson’s Black Rock v. Pavement Salvage Co. 291 In Anderson’s Black Rock, the invention solved a problem inherent in the application of blacktop or asphalt. 292 Asphalt is poured in layers, where one layer is applied on top of a lower layer. Frequently the lower layer become cool before the upper layer is deposited, resulting in an inferior, cold joint. The invention combined older elements on the same chasis to heat the lower layer before deposition of the next layer: a radiant heat source with a spreader and a tamper and screed, all on the same chasis. 293 Citing Great Atlantic & Pacific Tea Co., the Court invalidated the patent because the combination of known elements, while filling a long felt need and attaining commercial success, did not produce “an effect greater than the sum of

286. See generally Newell Co. v. Kinney MFG. Co., 864 F.2d 757 (Fed. Cir. 1988) (stating that the secondary considerations of Graham v. John Deere, while meriting consideration, do not control the obviousness conclusion.)
288. Id. at 42.
289. Id. at 52.
290. Id. at 51-52.
292. Id. at 57.
293. Id. 57-58
the several effects taken separately." In what appears to be a complete return to Great Atlantic & Pacific Tea Co.'s synergism test, the Court mentions Graham only to support the position that the Patent Act of 1952 did not change the general level of patentable invention and that a "strict observance' of those requirements is necessary. Commentators have noted that the Anderson's Black Rock opinion dismissed factual secondary considerations that indicated Non-obviousness, making a departure from the Graham analysis.

Furthermore, in Sakraida v. Ag Pro, Inc., the Court used similar reasoning to invalidate a patent on the ground of obviousness. The patent described a specially constructed dairy barn that employed water stored in tanks or pools to remove waste from the barn by flushing the water over sloped floors. The only point of novelty over prior art was the immediate and abrupt release of sheets of water, as opposed to the release water through hoses. Citing Anderson's Black Rock, the Court found the invention unpatentable because it could not be "characterized as synergistic, that is, resulting in an effect greater than the sum of the several effects taken separately." Both Anderson's Black Rock, and Sakraida have attracted considerably less citation than the trilogy, and have largely been seen as a disappointing resurrection of the synergism requirement.

IV. The Federal Circuit and Its View of Obviousness

In the wake of the Anderson's-Black Rock and Sakraida decisions, the circuits remained split on the interpretation of § 103 as a result of the Supreme Court's mutually incompatible rules set out in Great Atlantic & Pacific Tea Co., Anderson's Black Rock, Sakraida, and the trilogy. Some of the most consistent rulings were produced by courts using the Graham analysis, including the Court of Customs and Patent Appeals, while a few regional courts attempted to use the other Supreme Court cases, resulting in highly unpredictable results. Predictability, however, was soon to return to this area, as in 1982 the Court of Appeals for the Federal Circuit was created to hear all patent appeals, regardless of whether the case originated in the USPTO or any of the district.

294. Id. at 61.
295. Id. at 62.
296. Chisum, supra note 235, at § 5.02 [4].
298. Id. at 275-77.
299. Id. at 282.
301. Wigley, supra note 180, at 597.
302. Id.
Furthering the promise of uniformity, the Federal Circuit quickly adopted the decisions of the Court of Claims and Patent Appeals as binding precedent.304

One year later, the Federal Circuit clarified its position regarding Non-obviousness. In Stratoflex, Inc. v. Aeroquip Corporation, the court stated that the standard used in the Federal Circuit is that found in Graham v. John Deere.305 The Federal Circuit panel also further distanced itself from the Supreme Court approaches in Great Atlantic & Pacific Tea Co., Anderson's Black Rock and Sakraid: "A requirement for 'synergism' or a 'synergistic effect' is nowhere found in the statute . . . synergism may point toward non-obviousness, but its absence has no place is evaluating evidence of obviousness."306

A. Supreme Court Review of Federal Circuit Cases

Although the Supreme Court has jurisdiction to review Federal Circuit cases, many commentators have noted the willingness of the Federal Circuit to depart from Supreme Court precedent. Non-obviousness is an important example of this divergence.307 Because the Federal Circuit has exclusive jurisdiction over patent appeals, there is no opportunity for a split in the circuits. Coupled with the inherently technical nature of the issues involved in patent cases, the Supreme Court rarely grants review of Federal Circuit decisions.308 The Federal Circuit will often distinguish or even completely ignore Supreme Court precedent, even if it appears completely on point.309 For all practical purposes, the Federal Circuit effectively serves as the final arbiter of patent cases.310

B. Differing Standards of Review

In recent years, proving that a patent is obvious in the Federal Circuit has become extremely difficult.311 First, although obviousness is a

303. Id. at 598.
304. South Corp. v. United States, 690 F.2d 1368, 1369 (Fed. Cir. 1982).
306. Stratoflex, Inc., 713 F.2d at 1540.
308. King, supra note 307, at 1124.
309. Id.
310. Id.
question of law based on underlying factual determinations, the standard of review varies depending upon whether the case has been appealed from a district court or the USPTO. If the appeal originates from a district court, then the clearly erroneous standard is applicable to the factual determinations. If the appeal originates from a USPTO decision, however, the court must apply the "arbitrary, capricious or abuse of discretion" standard set forth in the Administrative Procedure Act (APA), giving greater deference to the USPTO's factual findings. Both of these standards present a high hurdle for a potential infringer to meet in a defense based on obviousness of the patented invention.

C. Combining Prior Art References

Where no one single reference contains all the elements of the claimed invention, the Federal Circuit requires that the patent examiner or alleged infringer show a teaching or a motivation to combine references that produce the obviousness issue. If a particular invention comprises a programming of a general purpose digital computer to perform some business task, the obviousness issue is compounded two different areas of technology: (1) digital computer programming; and (2) business methods. This requires a combination of references. Furthermore, "[a]ssertions of technical facts in areas of esoteric technology must always be supported by citation to some reference work recognized as standard in the pertinent art." But when dealing with a brand new area of technology, it is the practitioners of that area who are likely to have knowledge of science and techniques that are not yet written down in a "reference work recognized as standard."

Consider, for example, In re Zurko, where the Board of Patent Appeals and Interferences denied an application for patent describing an invention for a method of improving security in a computer system on the basis of obviousness. The claimed method involved processing a

314. Id.
317. In re Rouffet, 149 F.3d 1350, 1357 (Fed. Cir. 1998). See also In re Dembiczak, 175 F.3d 994, 999 (Fed. Cir. 1999).
321. In re Zurko, 111 F.3d at 888-90.
so-called “trusted” or secure command from an untrusted environment. Upon receiving a command from an untrusted computing environment, the trusted computing environment would then send the command back through a trusted pathway to the user for verification. If verified by the user over the trusted path, the computer in the trusted computing environment would then execute the command. This allowed the untrusted computer environment to co-exist and operate with the trusted computing environment. However, the Board rejected the claim as obvious in light of two references. The primary reference was the UNIX operating system, a secure or trusted computing environment, that is unable to run some untrusted programs securely. The second reference was a program known as FILER2, which repeats potentially dangerous commands back to the user for confirmation. The Board found that while neither UNIX nor FILER2 explicitly suggest combination of untrusted commands with a user confirmation over a trusted path to obtain a trusted command, “one of skill in the art wanting to create a secure system would know to seek verification of a command over a trusted path because untrusted paths by definition are not secure.”

Echoing the policy behind requiring that the prior art references teach or suggest combination, the Federal Circuit reversed the Board on the basis that their analysis was impermissible hindsight. While “it might seem logical to perform a repeat-back in the UNIX system over a trusted line, neither UNIX nor FILER2 teaches communicating with the user over a trusted pathway.” Despite the fact that the Board felt that although the references did not explicitly teach sending a repeat-back via a trusted path, the combination sought to be patented was inherent or implicit because it “is basic knowledge that communication in trusted environments is performed over trusted paths.” Although the instincts of the examiners may have been correct, the Federal Circuit refused to find the invention obvious because the USPTO failed to provide sufficiently detailed documentation of prior art.

Similarly, in American Imaging Services, Inc. v. Intergraph

---

322. Id. at 888.
323. Id.
324. Id.
325. Id.
326. Id.
327. Id.
328. Id. at 889.
329. Id.
330. Id.
331. Id. at 888.
332. Kasdan, supra note 319, at 173.
the Federal Circuit again demonstrated that "suggestion or motivation" must come from a reference. In this case the invention related to a Computer Aided Design system whose novel feature was the ability to scan and modify documents. The district court found the claims obvious in light of a reference to SuperPaint, a drawing program designed for the Apple line of computers that can both scan and modify documents. The Federal Circuit agreed with the district court that most of the claims were obvious, but overturned the obviousness ruling on a group of claims specifically directed toward the DOS operating system. Despite testimony by William Snider, the developer of SuperPaint, that SuperPaint could be configured to run on a DOS system, the Federal Circuit stated, "absent a teaching, suggestion, or motivation that one of ordinary art would reconfigure SuperPaint for use in [a DOS system] this conclusion of obviousness is erroneous." The Federal Circuit rationalized that William Snider's testimony on whether the claims indicating use of the invention in the DOS operating system were obvious in light of the SuperPaint reference was insufficient because "he was not versed in DOS operating systems." This conclusion, however, ignores the fact that since the mid 1980s the computer industry companies, such as Microsoft, have provided their entire application portfolios for both the DOS and Apple platforms. Although in the same opinion the Federal Circuit found William Snider to be a competent expert and characterized him as a "certified computer-software programmer with many years of experience," the Federal Circuit apparently thought he had no knowledge of the computer industry beyond those products he personally designed. Even so, as the Federal Circuit mentioned earlier in *American Imaging Services, Co.*, "[t]his evidence may be derived from the prior art teachings, the knowledge of one of ordinary skill in the art, or from the nature of the problem to be solved." William Snider's knowledge of capabilities in the industry, coupled with the abundance of products available on both platforms, would seem to fit in one of the latter two categories of combination of references.

334. Id. at *19-20.
335. Id. at *2.
336. Id. at *3-4.
337. Id. at *21.
338. Id. at *19.
339. Id. at *20.
340. Id. at *22.
341. Id. at *16.
D. Federal Circuit Solutions

Especially when dealing with new and unfamiliar technologies, the Federal Circuit has gone too far in protecting against hindsight. As a result, proving obviousness has now become practically impossible. The inherent danger in allowing hindsight to creep into the reasoning of the court is the relative ease of finding an invention obvious after all the pieces have been disclosed. "Combining prior art references without evidence of such a suggestion, teaching, or motivation simply takes the inventor’s disclosure as a blueprint for piecing together the prior art to defeat patentability – the essence of hindsight." Moreover, one commentator has noted that the Federal Circuit rarely overturns a jury’s factual determination supporting Non-obviousness, and juries tend to favor patentees on validity issues. Although the recent case of Dickinson v. Zurko modified the standard of review for USPTO factual determinations, 35 U.S.C. § 103 will probably not affect business method patents to the extent that those patents are a computer implementation of existing business processes. Furthermore, to the extent that most businesses use computers extensively, a person of ordinary skill, given the opportunity, will computerize any procedure that can be computerized, regardless of the absence of a “suggestion or motivation” in the prior art references. In light of this inherent or implicit motivation, the Federal Circuit should abandon its contrary presumption for computer-implemented business methods, and adopt the presumption that a person of ordinary skill in the art is motivated to computerize existing business methods.

V. Business Methods and the United States Patent Office

The major concern regarding computer-implemented business method patents is that these patents are merely old ideas being applied to a computer or to the Internet. Many practitioners and commentators fear that our current patent system is incapable of finding a business method patent obvious, believing the problem lies within the USPTO

342. Kasdan, supra note 319, at 165.
343. In re Dembiczak, 175 F.3d 994, 999 (Fed. Cir. 1999).
344. Id.
345. Stern, supra note 311, at 141.
346. Id. at 142.
347. Id. at 142 n.147.
349. Stern, supra note 311, at 142.
itself. For example, commentators often cite the following problems as causes of poor quality business method patents: (1) lack of experience amongst patent examiners in business methods, i.e., little or no business training; (2) inadequate prior art databases on the subject of business methods; (3) numerous incentives built into USPTO funding and examiner incentive structure to grant patents; (4) lack of proper classification techniques; and (5) agency capture, where the agencies are captured by the industries they regulate, as when employees from the USPTO move into the private sector. These criticisms, however, are not confined to computer-implemented business methods. In fact, as a matter of course, the USPTO tends to be the subject of such criticism during periods of expansion of new technology. For instance, during the period just after Chakrabarty for biotechnology (and more recently in the software industry) critics have claimed the USPTO will grant overly broad patents as a result of the aforementioned issues. Therefore, while these issues should (and are) being addressed by the USPTO, the criticism tends not to indicate a problem that is specific to computer-implemented business methods, but exists with all new areas of technology.

A. USPTO Initiatives

After the development of a new category of technology, the patent system generally needs time to adjust. In 1997, the USPTO opened a new class for business method patents Class 705, to better address the problems specific to computer-implemented business method technology. In furtherance of this effort, the USPTO has created a comprehensive training regimen for existing and new examiners in Workgroup

351. Kasdan, supra note 319, at 177.
352. Merges, supra note 350, at 590.
353. Id. (stating that the USPTO's incentive system favors granting over rejecting patents); Kasdan, supra note 319, at 178 (USPTO is currently funded through application, issuance, and maintenance fees).
354. Kasdan, supra note 319, at 178 (also noting that even if the proper classification techniques were available, reliable searches would still not be feasible because of the tremendous volume of prior art being generated).
355. Id. at 176-77.
356. Merges, supra note 350, at 590.
357. Id.
358. Id.
359. See generally USPTO White Paper, supra note 3.
360. Merges, supra note 350, at 590.
2760 (Class 705 is a member of Workgroup 2760). Furthermore, all allowed applications for patents on business methods will be subject to a "second look" by a senior examiner. The USPTO has also improved prior art databases and has signed an agreement with the Information Technology Association of America to help examiners get access to additional databases and prior art. However, many critics say that regardless of the volume of prior art, patent quality will still suffer due because the examiners simply don’t have the time to perform proper and through searches.

B. Budget Restrictions

Almost all critics agree that budget restrictions are a problem. In 1991, Congress required the USPTO to be self-funding from patent fees alone, thereby cutting the Patent Office off from the benefit of general tax revenues. At the same time, Congress allowed a surcharge to be added to the patent fees until the end of 1998. That surcharge, however, which generated $119,000,000 in the 1998 fiscal year, expired in October of that year. But fiscal year 2000 will be the first year that a portion or the USPTO’s fees will not be diverted to the general fund which, in 1998 fiscal terms, would mean and additional $71,000,000; in revenue thus resulting in about a $50,000,000 shortfall. While a complete analysis of the USPTO budget is beyond the scope of this Comment, the views of participants in the USPTO’s roundtable discussion on business method patents identified lack of resources as a major issue. Moreover, if the Class 705 staffing plan is any indication, the USPTO is preparing for a lean year: while the USPTO recognizes the need for additional examiners in Class 705, the current staffing plan is to transition experienced examiners from other groups and only hire sufficient

362. Id. at 13.
366. Gleick, supra note 8, at 47.
368. Id.
Class 705 examiners to cover attrition and modest expansion.371

C. Patent Examiner Staffing

At the same time, the USPTO reports that for the second year in a row, over 700 new examiners were hired, exceeding that number by one hundred in 1999.372 While critics charge that the examiners involved in business method patent applications do not have enough knowledge of business processes, the USPTO has responded by increasing the number of examiners with three or more years of business experience.373 Currently, of the fifty-three patent examiners in Class 705, fourteen (or about twenty-five percent) have business experience that pertains directly to the examination of business method patents.374 Furthermore, Class 705 staffing may be reflective of the ratio of business method patents to all utility patents.

For example, in 1999, the total number of patents filed with the USPTO was 289,488, of which 270,646 were filed for Utility patents.375 Of these, 2,658 applications were directed to Class 705 subject matter, comprising less than one percent of the total number of patent applications, and less than one percent of Utility applications.376 Additionally, the number of patents granted from Class 705 is not quite as large as some critics would have the public think.377 In 1998, 741 business method patents were issued; in 1999, the number issued was 1,001, and 1,056 were granted for fiscal year 2000.378 Furthermore, the rate of issuance of business method patents remains significantly below that of patents in general, as the rate of issuance for all patents has remained the same for the past twenty-five years at sixty-seven percent, while the rate of issuance for business method patents in 1999 was fifty-seven percent.379

D. Patent Office Standard for Non-obviousness

The USPTO uses the same criteria as the Federal Circuit in deter-

371. USPTO White Paper, supra note 3, at 11. Hiring additional Class 705 examiners is not the focus of the plan.
373. USPTO White Paper, supra note 3, at 10.
374. Id.
376. Id.
379. Internet Society Panel on Business Method Patents, supra note 5.
mining obviousness of an application for a patent:380 “Office policy has consistently been to follow Graham v. John Deere Co., in the consideration and determination of obviousness under 35 U.S.C. § 103.”381 Similarly, Graham’s secondary consideration must be evaluated by examiners when such evidence is submitted.382 While an examiner could use secondary consideration to demonstrate that someone of ordinary skill in the art would know to combine or modify a reference, evidence of long-felt need or the failed attempts of others is not likely to be available in an industry so new and fast paced as the internet.383 This is particularly true in light of the fact that on the Internet, a new development has a lifetime of about two years.384

E. Combination of Prior Art References at the Patent Office

Furthermore, the USPTO uses the same Federal Circuit guidelines when confronting the combination of references; references must have some suggestion or motivation indicated in the references themselves, or in the ordinary skill in relevant art.385 But as seen in the Federal Circuit cases, providing the required evidence of the ordinary skill in the art necessarily requires providing “objective evidence.”386 “Objective evidence” has come to mean a printed publication, something that poses a special problem in terms of software and computer-implemented business methods.387 Much of the material relied on by inventors in the area of computer-implemented business methods does not exist in a printed form, or is located in areas that the USPTO is not likely to look.388 Given the similarity of the approaches in both the Federal Circuit and the USPTO, and the standard of review after Zurko, it is hard to understand why the Federal Circuit would compel the issuance of any patent that the USPTO has found to be obvious. The Federal Circuit, however, continues to do so when there is a combination of references without an explicit suggestion to combine.389

382. Id.
384. Gleick, supra note 8, at 49.
386. See generally id.
387. Internet Society Panel on Business Method Patents, supra note 5.
388. Id.
389. See, e.g., In re Kotzab, 217 F.3d 1365 (Fed. Cir. 2000).
VI. PROTECTION AGAINST BAD BUSINESS METHOD PATENTS

A. Reexamination

Alternative protections exist for infringers of obvious business method patents. For instance, the USPTO has a reexamination procedure that third parties can use to compel a reexamination of an existing patent by raising a new issue of patentability which typically includes submitting prior art. While one aspect of the reexamination process is to build a larger prior art database at the USPTO, critics of the procedure point out that because of an estoppel effect built into the procedure, there will be no encouragement to send in valuable prior art. Essentially, any art submitted to the USPTO for consideration under reexamination cannot be used in a later proceeding, such as an infringement action. Potential infringers will likely save their best art for litigation, thereby rendering the existing reexamination procedure virtually useless.

B. First Inventor Defense Act of 1999

An additional protection called the First Inventor Defense Act of 1999 was enacted as part of the American Inventors Act of 1999. Relating only to business method patents, the Act provides a defense for alleged infringers if they can show that they reduced the invention to practice one year before the filing of the patent and used the invention commercially before the filing date. While the First Inventor Defense Act seems to be a good first step, the protection is likely to affect a very narrow group, and therefore does not truly address the obviousness issue.

C. Business Method Improvement Act of 2000

Interestingly, Representatives Rich Boucher and Howard Berman introduced a bill into Congress on October 3, 2000. House bill H.R. 5364, titled the “Business Method Improvement Act of 2000,” inter alia, would allow for a post issuance opposition proceeding up to nine months after the patent grant, require the publishing of the application

---

392. Id.
393. Id.
395. Id. at § 273(b)(1).
despite foreign filings, change the burden of proof from “clear and convincing” to “preponderance of the evidence,” require applicants to disclose the extent to which they searched for prior art, and, most disturbingly, create a presumption of obviousness for business methods where the only novel feature is the application of a computer. The bill would add the following language to 35 U.S.C. § 103(d)(1):

If the subject matter within the scope of a claim addressed to a business method invention would be obtained by combining or modifying one or more prior art references, and ... any of those prior art references discloses a business method which differs from what is claimed only in that the claim requires a computer technology to implement the practice of the business method invention, the invention shall be presumed obvious to a person of ordinary skill in the art at the time the invention was made.

Although this proposed section appears to solve a problem inherent in the combination of references with respect to computer-implemented business methods, the result goes well beyond: Such an addition to 35 U.S.C. § 103 would effectively make every computer implemented business method patent useless. For example, 35 U.S.C. § 103 not only applies to prosecution of patents, but also serves as an affirmative defense to infringement litigation. But in an infringement situation, what this proposed section does is effectively to require the patentee to not only meet the burden of proving infringement, but also prove his patent is Non-obvious, and thus valid. Similarly, such a situation is in direct contradiction to the long standing and sensible rule that a patent is presumptively valid and that the burden of proving invalidity lies with the party asserting invalidity. As a result, holders of business method patents would be less likely to enforce their rights, thus effectively overruling State Street.

Representative Berman, in introducing the bill, stated that its main purpose was to increase the quality of business method patents, the importance of which is tied to securing the value of companies with intellectual property. If business method patents are indeed being issued based on insufficient information regarding prior art, there is substantial risk to the inventor that those who know of the “prior art” could step forward at any time and invalidate the patent. This inherent uncertainty means that investors cannot be confident that businesses will actually reap the returns they would normally expect from patented

398. Id. at 15.
But the presumption of obviousness included in the bill will certainly devalue the patent in light of the higher burden involved in enforcing the patent against an infringer. Furthermore, at every turn the patentee will have to defend the validity of the patent, including both actions by the patentee (such as initial prosecution, reissue, obtaining a correction of a minor error) and third party activities (such as infringement, and reexamination). Therefore, it is doubtful that the presumption of obviousness will reduce the uncertainty or increase the value of a business method patent.

The rationale behind the bill ignores the possibility that computer-implemented business methods may exist that are truly Useful, Novel, and Non-obvious. In fact, what may be truly novel about many computer-implemented business methods is how they are actually implemented. But even if the implementation required a indisputable advance in technology, the fact that the overall invention would be labeled a “business method” would invoke the presumption. Such a patent system would bring back the categorical method of determining what is patentable subject matter, the very standard that State Street sought to erase.

There is a considerable difference between a presumption that all business methods patents are per se obvious and a presumption that practitioners of computer-implemented business methods are motivated to computerize business methods. First, the latter presumption does not create a new burden for the patent holder of proving validity during litigation or such proceedings as re-examination. Secondly, the latter presumption does not ignore truly Novel and Non-obvious business methods by presuming them as obvious. The presumption that practitioners are motivated to computerize business methods only seeks to establish the ordinary skill in the art. The party attacking the Non-obviousness of a computer-implemented business method, however, would still need to demonstrate that both the business method and the specific computer-implementation of that method are obvious. In contrast, in the case of the Business Method Improvement Act, if the invention fits into the “business method” category, then it is per se obvious.

VII. CONCLUSION

Many practitioners believe that the Non-obviousness standard is inappropriate for software, and to the same extent computer-implemented business methods, because of the incremental and collective nature of the development of those technologies. Considering the three

402. Id.
basic conditions for patentability, namely Eligibility/Utility, Novelty, and Non-obviousness, the balance of emphasis has clearly changed to Non-obviousness for software and computer implemented business methods. Where 35 U.S.C. § 101 eligibility used to provide the highest hurdle for applicants for patents, *State Street* and the *Diehr* progeny have removed the patentable subject matter barrier. Novelty, or more specifically anticipation, is fairly rare in an area that bridges different technologies such as computer implemented business methods. As a result, Non-obviousness has become somewhat of the last guardian of the quality of business method patents.

As discussed infra, establishing the obviousness of a computer-implemented business method under the current Federal Circuit and USPTO standards is nearly impossible. Protection against the award of patents for inventions and technologies that are already a part of the public domain is paramount to ensuring the high quality of patents and the patent system. Blanket approaches that seek to formally disfavor the award of patents for computer-implemented business methods, such as the proposed Business Method Improvement Act of 2000, go too far in the opposite direction. Such approaches ignore the possibility and the existence of important advances in computer-implemented business methods that are deserving of patent protection. But because of the unique merging of at least two areas of technology, proper decisions regarding the obviousness of computer-implemented business methods requires the adoption of a presumption that computer and internet programming practitioners are inherently motivated to computerize business methods.

While many have criticized the USPTO for awarding allegedly "bad" patents on computer-implemented business methods, the Patent Office is not solely to blame. While taking positive steps to improve the examination process for computer-implemented business method applications, the Patent Office uses the same standards used in the Federal Circuit with regard to obviousness. Maybe the more appropriate question should be, "why is the Federal Circuit willing to grant so many patents that the USPTO rejected?"

DAVID SCHUMANN