

Assessing the Patentability of Financial Services and Products

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Cite as 3 J. High Tech. L. 141 (2004)

I. INTRODUCTION

This paper examines the patentability of business methods, specifically those that are related to financial products. Traditionally, business methods have been excluded as unpatentable subject matter under 35 U.S.C. § 101.¹ In the late 1990's, State Street Bank & Trust entered negotiations with Signature Financial Group, Inc. for a license on a patented method of valuing a Mutual Fund product commonly known as a Master-Feeder fund.² When negotiations broke down, State Street challenged the validity of that patent.³ The appellate court decision examined two exceptions to patentable subject matter: the mathematical algorithm exception and the business method exception.⁴ The court ruled that a mathematical algorithm by itself is an abstract idea, and not patentable, but when it is used to yield a useful, tangible result, it is transformed into patentable subject matter.⁵ The court went on to vitiate the business method exception, and stated that business methods are patentable if they satisfy the normal prongs for a patent: subject matter, utility, novelty, and nonobviousness.⁶

The *State Street Bank & Trust Co. v. Signature Financial Group, Inc.* case, which has been extensively commented on, caused a tremendous uproar in the patentability of business methods, particularly in the financial industry. Since this 1998 decision, there

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1. See *State St. Bank & Trust Co. v. Signature Fin. Group Inc.*, 149 F.3d 1368, 1375 (Fed. Cir. 1998). Since this decision, State Street Bank & Trust Co. has changed their name to State Street Corporation.

2. See *id.*

3. *Id.* at 1370.

4. *Id.* at 1373.

5. *Id.*

6. *Id.*

has been a flood of patents submitted for business methods. While the Federal Circuit Court of Appeals intended to clarify business method patent law, the *State Street* decision served to further obfuscate this area of intellectual property jurisprudence, and may potentially have profound ramifications on our financial markets.

II. HYPOTHESIS

Should business methods be patentable? This question cannot simply be answered in the affirmative or negative. This area of law is highly controversial because it is all based on a matter of degree, and is highly subjective. All legal conundrums share the same problems of ambiguity, but this body of law is fundamentally problematic and difficult to predict.

By way of illustration, a Mutual Fund is simply a company, just like IBM or General Motors. The distinction lies in that while most companies produce a product or service, all that a mutual fund does is make investments, so it is referred to as an Investment Company. A typical open-end mutual fund obtains its price per share, or Net Asset Value ("NAV") by the following formula: Total Net Assets divided by Shares Outstanding.⁷ The formula itself is not patentable subject matter. It is simply an abstract idea and falls under the mathematical algorithm exception, whereas a method by which a custodian, such as State Street, uses to compute a NAV, will likely be patentable.⁸ The line of demarcation is extremely blurry, and this paper will survey the scope of patent rights as it pertains to various financial products.

III. PATENT LAW 101

Patent law, like so many other areas of codified law, begins broadly and then carves out exceptions.⁹ The field is analogous to

7. Total Net Assets is represented by the net of all the Assets and Liabilities of the fund (this is known as the "Bottom Line"), plus the aggregate Market Value of all the holdings of the fund. For example, if a fund owns 50 shares of GE and GE prices at \$20 per share at the close of the market, \$1000 of market value will be added to the Bottom Line. The shares outstanding (also known as Capital Stock or Capstock Shares) is the number of shares of the fund that is owned by various investors. At the close of the market, once all the prices for all the holdings are obtained, the market value for all the securities owned is computed and the mutual fund is priced by the custodian.

8. A custodian is an entity that provides back office services for the investment companies, such as accounting, pricing of the assets of the funds, and processing of trades.

9. *Diamond v. Diehr*, 450 U.S. 175, 182 (1981) (citing H.R. Rep. No. 82-1923, at 6 (1952)) (Congress declared that it "intended statutory subject matter to 'include anything under the sun that is made by man'"); see also *State St. Bank & Trust Co.*,

Income Tax Law in which Section 61 of the Internal Revenue Code defines income as “income from whatever source derived,” and then goes on to clarify and create exceptions in case law and regulations.¹⁰ In general, for a patent application to be successful, it must meet three requirements of: patentable subject matter, novelty and nonobviousness.¹¹ Much of the controversy surrounding the threshold patent requirements focuses on the determination of what is patentable subject matter.

The United States Code defines patentable subject matter stating, “whoever invents or discovers any useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefore, subject to the conditions and requirements of this title.”¹² Thus, Congress lays out the four main categories of inventions that are patentable subject matter.¹³ The Supreme Court then goes on to exclude laws of nature, natural phenomena, and abstract ideas from patentable subject matter.¹⁴ The mathematical algorithm exception and the business method exception flow from these exceptions, both of which have been completely revamped.¹⁵

A. Business Method Exception

The business method exception, a judicially created exception, basically states that methods of doing business do not fall within any of the four categories of statutory subject matter.¹⁶ For years this exception provided a bright-line rule to measure what is patentable subject matter, although the rule was tenuous at best, since it was created in dictum.¹⁷

129 F.3d at 1373.

10. See 26 U.S.C. § 61 (2003).

11. Christopher S. Cantzler, *State Street: Leading the Way to Consistency for Patentability of Computer Software*, 71 U. COLO. L. REV. 423, 438-41 (Spring 2000); See also 35 U.S.C. §102 (2003) (requiring that invention be “novel”, i.e. not known or used by others); 35 U.S.C. §103 (requiring that invention be “nonobvious”, i.e. there is not a prior art which would have made invention obvious to those familiar with particular subject matter of invention).

12. 35 U.S.C §101 (2003).

13. *Id.*

14. See *Diamond v. Diehr*, 450 U.S. at 185.

15. See generally *State St. Bank & Trust Co.*, 149 F.3d 1368 (revising both exceptions and setting out new test for patentable subject matter).

16. See Colin P. Marks, *Opening the Door to Business Methods: State Street Bank & Trust Co. v. Signature Financial Group, Inc.*, 37 HOUS. L. REV. 923, 935 (2000); See also *In re Schrader*, 22 F.3d 290, 298 (Fed. Cir. 1994) (Newman, J. dissenting) (reaffirming that “the patent system is directed to tangible things and procedures, not mere ideas”).

17. *Schrader* at 298; see also David T. Dutcher, *Patents on Methods of Doing*

The genesis of the business method exception is found within the *Hotel Security* case.¹⁸ In this case, a method of handling order slips in a restaurant was patented.¹⁹ The purpose of this method was to “prevent fraud and speculation by waiters and cashiers in hotels and restaurants.”²⁰ The court determined that this method of handling order slips was something that was already practiced in the restaurant business, and therefore, invalidated the patent because it lacked novelty.²¹ The court also stated that this patent would not pass muster under the obviousness element, because this process was sure to have naturally evolved in the restaurant business.²² The patent in this case fails due to lack of novelty and nonobviousness, but the court then goes on in dictum to state, “A system of transacting business disconnected from the means for carrying out the system is not, within the most liberal interpretation of the term, an art.”²³ From this dictum, the courts formed this ethereal rule to guide them on many patent cases. Thus, although it appears on its face that the business method exception is a precedent which can guide inventors seeking patent protection, in reality it is a vague and amorphous concept which most courts simply side step by invalidating patents based on other exclusions.²⁴ Indeed, even before 1998, there were many indications that this exception was weakening.²⁵

Other cases followed to support the business method exception. In the case *Loew’s Drive-In Theatres v. Park-In Theatres*, the disputed patent involved a system of parking cars in an open lot so as to maximize the viewing of the movie screen without obstruction.²⁶ The

Business, 79 DENV. U.L. REV. 173, 177-78 (2001).

18. *Hotel Sec. Checking Co. v. Lorraine Co.*, 160 F. 467 (2d Cir. 1908), see also *State St. Bank & Trust Co.*, 149 F.3d at 1376.

19. *Hotel Sec. Checking Co.*, 160 F. at 467 (holding that method of processing order slips in restaurant was not patentable because it lacked novelty).

20. *Id.*

21. *Id.* at 472.

22. *Id.* at 470.

23. *Id.* at 469; The court quotes *Fowler v. City of New York*, 121 F. 747, 748 (2d Cir. 1903), which states, “No mere abstraction, no idea, however brilliant, can be the subject of a patent irrespective of the means designed to give it effect.”

24. See generally *In re Schrader*, 22 F.3d 290 (Fed. Cir. 1994).

25. Judge Newman’s strong dissent lays some of the groundwork for the eventual demise of the business method exception. In *Schrader*, she declares, “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. Patentability does not turn on whether the claimed method does ‘business’ instead of something else, but on whether the method, viewed as a whole, meets the requirements of patentability as set forth in Sections 102, 103 and 112 of the Patent Act.” *Id.* at 298.

26. *Loew’s Drive-In Theatres, Inc. v. Park-In Theatres, Inc.*, 174 F.2d 547 (1st

court held that although a novel idea existed, a physical invention or manifestation is required for a patent to be valid.²⁷

B. Mathematical Algorithm Exception

The mathematical algorithm exception to patentable subject matter comes from the notion that a mathematical formula or theorem, such as $E=MC^2$ is not patentable because it is merely an abstract idea. The exception begins with the *Benson* case, in which the disputed patent involved a method of converting binary-coded decimal numerals into pure binary numbers.²⁸ The Supreme Court invalidated this patent, because the process did not transform one thing into another tangible result.²⁹ The court stated that an idea, in and of itself, is merely an abstract concept and not patentable subject matter.³⁰ As a policy matter, the court feared that granting a patent such as this, “would wholly pre-empt the mathematical formula and in practical effect would be a patent on the algorithm itself.”³¹ Thus, the court appeared concerned with the slippery slope that such a precedent would create which would inhibit invention by not allowing inventors to use various math formulas.

Next to follow was *Parker v. Flook*, concerning a patent claim for a mathematical algorithm that calculated alarm limits for a chemical process.³² The process did not affect the means of setting off the alarm, but was only novel in the sense that it described a better method to calculate these limits using a known mathematical algorithm.³³ The court extended the *Benson* case to exclude not only mathematical algorithms, but also the processes that utilize them.³⁴ The court notes that the mere inclusion of a mathematical algorithm as part of the invention does not invalidate it, but when the invention

Cir. 1949).

27. *Id.* at 552 (declaring that a physical manifestation of the invention is a requirement for a patent to exist. “Thus a system for the transaction of business, such, for example, as the cafeteria system for transacting the restaurant business, or similarly the open-air drive-in system for conducting the motion picture theatre business, however novel, useful, or commercially successful is not patentable apart from the means for making the system practically useful, or carrying it out.”).

28. *Gottschalk v. Benson*, 409 U.S. 63, 64 (1972).

29. *Id.* at 71.

30. *Id.*

31. *Id.* at 72.

32. *Parker v. Flook*, 437 U.S. 584 (1978).

33. *Id.* at 585.

34. Claus D. Melarti, *State Street Bank & Trust Co. v. Signature Financial Group, Inc.: Ought the Mathematical Algorithm and Business Method Exceptions Return to Business as Usual?*, 6 J. INTELL. PROP. L. 359, 367 (Spring 1999).

itself is merely the application of the algorithm, it is invalid.³⁵

The last in the trilogy of cases to come down on this subject is *Diamond v. Diehr*.³⁶ *Diehr* involved a patent for a process of molding raw synthetic rubber into refined products.³⁷ The process employed a computer using a mathematical formula that controlled the molding process so it would work more effectively.³⁸ The Supreme Court held the patent valid, stating, "when a claim containing a mathematical formula implements or applies that formula in a structure or process which, when considered as a whole, is performing a function which the patent laws were designed to protect (*e. g.*, transforming or reducing an article to a different state or thing), then the claim satisfies the requirements of Section 101."³⁹ Although this case was not explicit as to how it should be reconciled with *Benson* and *Flook*, it suggests that when an algorithm is part of a process that produces a physical result, in this case an industrial product, it should be patentable.

Over the next several years, the Court of Customs and Patent Appeals attempted to formulate an improved test for determining the scope of the mathematical algorithm exception.⁴⁰ The test was the synthesis of three cases known as the Freeman-Walter-Abele Test.⁴¹ The first step in the test is to determine whether a mathematical algorithm is directly or indirectly cited as defined in *Benson*.⁴² Next, if an algorithm exists, the court will examine whether it applies to a physical element of the claim or if the patent claims the algorithm itself.⁴³

The Federal Circuit laid out the last permutation of the mathematical algorithm exception in *Alappat*, in what is sometimes referred to as the "Means" Test.⁴⁴ The patent in this case consisted of a mathematical algorithm that processes data from an electrical input in a way that the information is displayed more clearly on a monitor.⁴⁵ In this case, the algorithm had the function of taking data and

35. *Flook*, 437 U.S. at 594.

36. *Diamond v. Diehr*, 450 U.S. 175 (1981).

37. *Id.*

38. *Id.*

39. *Id.* at 192.

40. Chad King, *Abort, Retry, Fail: Protection for Software-Related Inventions in the Wake of State Street Bank & Trust Co., v. Signature Financial Group, Inc.*, 85 CORNELL L. REV. 1118, 1138 (May 2000).

41. See *In re Freeman*, 573 F.2d 1237 (C.C.P.A. 1978); *In re Walter*, 618 F.2d 758 (C.C.P.A. 1980); *In re Abele*, 684 F.2d 902 (C.C.P.A. 1982).

42. King, *supra* note 37, at 1138.

43. *Id.*

44. *In re Alappat*, 33 F.3d 1526 (Fed. Cir. 1994).

45. *Id.* at 1544.

transforming it into another form of data that had a greater utility.⁴⁶ The court upheld this type of process as patentable, ruling, “This is not a disembodied mathematical concept which may be characterized as an “abstract idea,” but rather a specific machine to produce a useful, concrete, and tangible result.”⁴⁷

C. The Merrill Lynch Cash Management Account

A case with similar issues to *State Street* is the *Paine, Webber, Jackson & Curtis, Inc. v. Merrill Lynch, Pierce, Fenner & Smith, Inc.* case involving a Cash Management Account (“CMA”).⁴⁸ The challenged patent was for a CMA system that combined three popular financial products, claiming that the customer receives synergistic benefits from the combination of the components.⁴⁹ The components are: a securities account that facilitates securities transactions, a money market account, and a Visa charge/checking account.⁵⁰ An example of an advantage of this combination is the ability of a customer to quickly swap or automatically invest idle proceeds into or out of a choice of money market funds, a process in the finance industry commonly referred to as “cash sweep”.⁵¹

Paine Webber first claimed that this patent was invalid because it did not claim a process, machine or manufacture or composition of matter required under Section 101.⁵² The court held that the label attached to the invention was irrelevant as long as it was patentable subject matter.⁵³ The court next turned to the mathematical algorithm exception. The court examined the definition of the word “algorithm” and held that an algorithm is “a procedure for solving a given type of mathematical problem.”⁵⁴ The judges ruled that because the invention in this case did not directly or indirectly recite a procedure for solving a mathematical problem, the algorithm

46. *Id.*

47. *Id.*

48. *Paine, Webber, Jackson & Curtis, Inc. v. Merrill Lynch, Pierce, Fenner & Smith, Inc.*, 564 F.Supp. 1358 (Del. 1983) (holding computerized “cash sweep” process patentable). Cash sweep is designed to “sweep” idle, uninvested cash into an interest bearing short term investment instrument, such as a money market fund. The benefit of this is that it allows an investor or investment company a highly liquid medium to invest surplus cash or to redeem from the short term instrument to increase cash availability.

49. *Id.* at 1362; see U.S. Patent No. 4,346,442 (issued Aug. 24, 1982).

50. *Merrill Lynch*, 564 F. Supp. at 1366.

51. *Id.* at 1362.

52. *Id.* at 1365; see 35 U.S.C. §101 (2003).

53. *Merrill Lynch*, 564 F. Supp. at 1366.

54. *Id.* at 1367-68.

exception did not apply.⁵⁵ Lastly, the court sidestepped the business method and examined the claim as more of a software issue than a business method.⁵⁶ The court held that “the patent claimed statutory subject matter because the claims allegedly teach a method of operation on a computer to effectuate a business activity.”⁵⁷

This case was significant not only in the fact that it set the stage for *State Street*, but it raised the policy issue of patentability of financial products such as this.⁵⁸ The “Cash Sweep” process is an integral part of many mutual fund complexes, and by upholding such a patent, the court effectively granted a monopoly on the process.⁵⁹

IV. STATE STREET V. SIGNATURE FINANCIAL

In the fall of 1998, a patent decision came down that redefined business method patents, and sent shockwaves through the financial services and e-commerce industries.

Signature Financial Group Inc. (“Signature”) is in the businesses of providing services to administer mutual fund products. In 1993, they obtained a patent (‘056 patent) for a processing system that administered a mutual fund configuration Signature terms a “Hub and Spoke”.⁶⁰

The Hub and Spoke configuration is an arrangement of mutual funds that allows for the commingling of assets of two or more funds.⁶¹ There are several benefits to this arrangement, including economies of scale, and beneficial tax and regulatory treatment.⁶² The finance industry demands that a mutual fund product in a Hub and Spoke configuration is valued in a timely and accurate manner.⁶³ This is extremely difficult to accomplish due to the complexity of the arrangement, but the invention in the ‘056 patent solves this problem by employing a software program that uses mathematical algorithms to manage the data.⁶⁴

Subsequent to the granting of that patent, State Street Bank & Trust Co. (“State Street”) entered negotiations with Signature to

55. *Id.*; see also *supra* note 38.

56. *Merrill Lynch*, 564 F. Supp. at 1369.

57. *Id.* The court did state, however, that this same business method would have not been patentable if done by hand. *Id.*

58. *Id.*

59. *Id.*

60. U.S. Patent No. 5,193,056 (issued Mar. 9, 1993).

61. *Id.*

62. *Id.*

63. *Id.*

64. *Id.*

license this system for their use.⁶⁵ When negotiations broke down, State Street brought a declaratory judgment action claiming that the '056 patent was not patentable subject matter.⁶⁶ The District Court found that the invention consisted of a mathematical algorithm that does not involve a physical transformation, but rather simply changes one group of numbers into another set.⁶⁷ The court also examined the business method exception and ruled that the '056 patent was on a multi-tiered investment portfolio and validating the patent would be too broad and would create a harmful industry monopoly.⁶⁸

The Federal Circuit Court of Appeals ruled on the case in 1998 and overhauled the entire area of business method patents.⁶⁹ The court began by reaffirming the broad scope that Congress intended 35 U.S.C §101 to encompass.⁷⁰ Next, the court clarified the mathematical algorithm exception by recognizing that a mathematical algorithm by itself is an abstract idea, and not patentable subject matter, but it becomes patentable when reduced to a useful, concrete and tangible result.⁷¹ In a broad sweeping move, the court wiped out the Freeman-Walter-Abele Test, and declared that the new test should not focus on which of the four categories of statutory subject matter the invention is within, but rather "on the essential characteristics of the subject matter, in particular, its practical utility."⁷² The court also noted that once this portion of the test is satisfied, the invention must still survive the other conditions of Title 35 including novelty, nonobviousness, and adequacy of disclosure and notice.⁷³ The court held that the Hub and Spoke software system produces a useful result, even if that result is expressed by a number or price.⁷⁴

The court next set its sights on permanently retiring the business method exception.⁷⁵ The Court of Appeals looked to Judge

65. *State St. Bank & Trust Co. v. Signature Fin. Group Inc.*, 149 F.3d 1368, 1370 (Fed. Cir. 1998).

66. *Id.*

67. *See State St. Bank & Trust Co. v. Signature Fin. Group, Inc.*, 927 F. Supp. 502, 514 (D. Mass. 1996).

68. *Id.* at 516; The court expressed its policy concern by stating, "patenting an accounting system necessary to carry on a certain type of business is tantamount to a patent on the business itself. Because such abstract ideas are not patentable, either as methods of doing business or as mathematical algorithms, the '056 patent must fail." *Id.*

69. *See State St. Bank & Trust Co.*, 149 F.3d at 1373.

70. *Id.*

71. *Id.* at 1373; *see also In re Alappat*, 33 F.3d 1526, 1544 (Fed. Cir. 1994).

72. *State St. Bank & Trust Co.*, 149 F.3d at 1375.

73. *Id.*

74. *Id.*

75. *Id.* at 1375; "We take this opportunity to lay this ill-conceived exception to rest." *Id.*

Newman's vigorous dissent in *Schrader* that criticized the rule as "error-prone, redundant, and obsolete."⁷⁶ The court dismissed the District Court's concern of an overly broad precedent, and stated succinctly the new rule as, "Claims should not be categorized as methods of doing business. Instead such claims should be treated like any other process claims."⁷⁷ Thus, the death of the business method exception.⁷⁸ If a claim is too broad, it should be treated by courts under §§ 102, 103 and 112 like any other patent claim.⁷⁹

A. Summary of the New Test

The *State Street* case is often misunderstood. This precedent only applies to the determination of whether something is patentable subject matter under Section 101, and the Court of Appeals never ruled on whether the '056 patent was valid.⁸⁰ The court did emphasize that to pass muster, a business method patent must satisfy all other criteria in Title 35, such as novelty and nonobviousness.⁸¹ It no longer is necessary for patent clerks to craft their patent so that the applications are interpreted as a machine and not a process, and it is now sufficient as long as the invention falls under one of the four categories of subject matter.⁸² It is not clear if the Hub and Spoke would have survived Section 101 if the entire process was calculated by hand using the same algorithms. To patent a business method, it must simply satisfy all of the normal criteria under Title 35.⁸³ If the method involves a mathematical algorithm, it is still patentable if the end product is a useful, tangible result.⁸⁴

V. CASES FOLLOWING STATE STREET

In 1999, the United States Supreme Court allowed *State Street v. Signature Financial* to remain the law of the land, at least for the

76. *Id.* at 1375 (quoting *In re Schrader*, 22 F.3d 290, 298 (Fed. Cir. 1994) (Newman, J. dissenting)).

77. *Id.* at 1377 (quoting Examination Guidelines, 61 Fed. Reg. 7478, 7479 (1996)).

78. *Id.* at 1375.

79. *Id.* at 1377 (holding that §101 patentable subject matter is not the place to limit the scope of a patent).

80. *Id.* at 1377.

81. *Id.* at 1375.

82. *Id.* at 1375 (stating that the patent need not specify whether the invention is a process, machine, manufacture, or composition or matter).

83. *See State St. Bank & Trust Co. v. Signature Fin. Group Inc.*, 149 F.3d 1368 (Fed. Cir. 1998)

84. *Id.*

foreseeable future.⁸⁵ There have been only a handful of cases since *State Street* involving business method patents, possibly due to the novelty of this area and the lack of predictability in litigation. The decision in *State Street*, which had as a goal the clarification of this area of patent law, has in effect confounded the area and left those in certain industries, particularly in financial services, scrambling to determine whether they require intellectual property protection for some of their products, services, or methods.

One of the most talked about cases to follow *State Street* is *AT&T v. Excel*.⁸⁶ As a result of the breakup of AT&T, telephone customers have a local carrier, and a choice of long distance carriers.⁸⁷ The invention in question uses a mathematical algorithm to allow a caller's telephone call to automatically be routed to the correct long distance carrier.⁸⁸ In addition, it creates a "record message" which stores data about the call, such as duration, for billing purposes.⁸⁹ The District Court ruled that the invention was not patentable subject matter due to the mathematical algorithm exception.⁹⁰

On appeal, Excel unsuccessfully argued that, the system consists of nothing more than "simple Boolean [e.g if this, then do this] mathematics" and shouldn't be protected by U.S. patent laws.⁹¹ AT&T countered by claiming that its invention applies the Boolean principle to achieve a useful and tangible result.⁹² The Federal Circuit, however, followed *State Street* holding that an invention that contains a mathematical algorithm is patentable subject matter as long as it has a useful, concrete and tangible result, regardless of whether it involves a physical transformation or conversion of the subject matter.⁹³

Another case creating buzz is *Amazon.com v. Barnes & Noble*.⁹⁴ Although *Amazon* addresses a business method patent issue, it has

85. *State St. Bank & Trust Co. v. Signature Fin. Group Inc.*, 149 F.3d 1368 (Fed. Cir. 1998), *cert. denied*, 525 U.S. 1093 (1999); Subsequently *State Street* settled the case with Signature and obtained a license to use the Hub and Spoke system. Interview with Anonymous, Senior Vice President, State Street Corporation, in Boston, Ma. (Mar. 22, 2003).

86. *AT&T Corp. v. Excel Communications*, 172 F.3d 1352 (Del. 1999), *cert. denied*, 528 U.S. 946 (1999).

87. *Id.* at 1353.

88. *Id.* at 1354.

89. *Id.*

90. *AT&T Corp. v. Excel Communications*, 1998 WL 175878 (D. Del. 1998).

91. *AT&T Corp. v. Excel Communications*, 172 F.3d 1352, 1358.

92. *Id.*

93. *Id.* at 1358-60 (Del. 1999).

94. *Amazon.com, Inc. v. Barnesandnoble.com, Inc.*, 239 F.3d 1343 (Fed. Cir. 2001).

intellectual property implications in areas such as e-commerce. The contentious invention is a method of ordering items electronically via an internet website.⁹⁵ The normal e-commerce process uses “shopping cart” technology in which a consumer selects items for purchase, and then goes through a sometimes lengthy “checkout phase” where the consumer enters personal, shipping and billing information to complete the order.⁹⁶ Amazon.com (“Amazon”) patented what is known as a “one-click” ordering system which stores the information of the seller from a previous transaction so that the consumer can order goods by clicking one button on the mouse.⁹⁷ Barnes & Noble (“BN”) created a similar product, known as “express lane” software on their website, and Amazon brought a patent infringement suit.⁹⁸

The District Court granted Amazon a preliminary injunction, but the Federal Circuit reversed, holding that “Barnes & Noble has mounted a substantial challenge to the validity of the patent in suit.”⁹⁹ The court first wrestled with the nomenclature issues of the definition of “shopping cart” and “single action” technology in e-commerce.¹⁰⁰ At some point, both parties in the case even disputed the number of mouse clicks required to facilitate the process.¹⁰¹ Taking these last two arguments together, BN made the contention that their use of “single action” technology does not infringe on Amazon’s patent, “so long as the single action technology was used within the paradigm of a ‘shopping cart model’.”¹⁰² BN proceeded with this “prior art” argument by citing the example of CompuServe’s Trend System, a system which allows a purchaser to perform a single click on an image on a website that instantly provides the user with a stock chart and automatically charges an account 50 cents.¹⁰³ This argument was compelling to the court, and they held that BN had raised a substantial question of invalidity of the patent.¹⁰⁴

95. *Id.* at 1347.

96. *Id.*

97. *Id.*

98. *Id.* at 1346.

99. *Amazon.com, Inc. v. Barnesandnoble.com, Inc.*, 73 F. Supp. 2d 1228 (W.D. Wash. 1999), *rev’d*, 239 F.3d 1343, (Fed. Cir. 2001).

100. *Amazon.com*, 239 F.3d at 1349. The court debates whether or not these inventions are simply different machinations of the existing “prior art” of shopping cart technology or indeed new inventions. *Id.*

101. *Id.* at 1356.

102. *Id.*

103. *Id.* at 1360.

104. *Id.* at 1363.

VI. STATE STREET'S AFFECT ON THE FINANCE INDUSTRY

The *State Street* case has opened the floodgates on business method patents. Not only is it possible to patent many business methods and preserve the intellectual property rights on an invention, now there is a fear that if one does not patent, a company may be left out in the cold.¹⁰⁵ This is particularly relevant to the financial industry. For years those in financial services never considered patent protection for many of their products or methods.¹⁰⁶ Previously, it was always thought that these methods were not patentable due to the business method exception, and that they would be protected as trade secrets.¹⁰⁷ The *State Street* decision changed all that.¹⁰⁸

Patent law as a policy matter strikes a delicate balance in many areas. For example, should the inventor of a life-saving drug be allowed to enjoy patent protection to the detriment of others who need the medicine? Or in the case of many areas of technology, do intellectual property rights retard the growth and innovation on similar products? The flip side is that if business methods are not patented, it may discourage companies to pour money into research and development, only to have the fruits of their labor available to competitors in the industry.¹⁰⁹

Historically in the financial industry when someone invented a new financial product or method it was openly copied, used, and improved by others in the industry.¹¹⁰ This was never problematic to the inventor, because the original inventor would still be well compensated.¹¹¹ Now many small companies in the financial industry see this as a way to obtain a strategic competitive advantage with larger companies.¹¹²

105. See Christopher S. Cantzler, *State Street: Leading the way to consistency for patentability of computer software*, 71 U. COLO. L. REV. 423, 450 (Spring 2000).

106. Interview with Anonymous, Senior Vice President, State Street Corporation, in Boston, Ma. (Mar. 22, 2003).

107. See Dave Kovaleski, *Ownership Stamp: Patents for investment processes still unusual; Father and son are among the few recipients*, PENSIONS AND INVESTMENTS, Apr. 17, 2000, at 3.

108. See *State St. Bank & Trust Co. v. Signature Fin. Group Inc.*, 149 F.3d 1368 (Fed. Cir. 1998).

109. See generally Keith E. Maskus & Eina Vivian Wong, *Searching for Economic Balance in Business Method Patents*, 8 WASH. U. J.L. & POL'Y 289, 294 (2002) (discussing some of the policy concerns and controversy over business method patents).

110. Aaron Lucchetti, *Patent Poses Problem for Amex Exchange-Traded Funds*, WALL ST. J., Sep. 20, 2000, at C1; U.S. Patent No. 5,806,048 (issued Sep. 8, 1998).

111. Lucchetti, *supra* note 99.

112. Interview with Anonymous, Senior Vice President, State Street Corporation,

Although the Hub and Spoke method has lost much of its popularity in favor of “Fund of Funds” and other investment products, this method was a popular structure with investment advisors in the late 1990’s due to the strong desire to pool assets and reduce costs.¹¹³ Signature Financial, a relatively small company in the industry, was able to demand that users of the Hub and Spoke use their company for fund administration services and submit to their fees for use of this structure.¹¹⁴ Investment advisors were afraid to use products of a competitor for fear of litigation that could impact the administration and pricing of their funds.¹¹⁵

Should patent protection be allowed on something so vital to our economic markets? For example, in the early 1970’s, Fischer Black, Myron Scholes and Robert Merton invented the famous Black-Scholes equation which is the foundation for most pricing models for options.¹¹⁶ Had this been invented today, it is likely that the Nobel Prize winners would have received a patent for their method.¹¹⁷ While this potentially could have made them very wealthy, it is also easy to imagine the deleterious effect it would have had on the marketability and innovation for derivative financial products.

Consider a group of patents that were issued about the same time as the *State Street* ruling. Mopex, Inc. successfully patented a process for securitizing mutual funds to allow them to be exchange-traded on the American Stock Exchange (“AMEX”).¹¹⁸ The AMEX developed and employed the uses of exchange-traded funds since the early 1990’s.¹¹⁹ From seemingly out of nowhere the inventors, Kenneth Kiron and Kevin Bender, emerged with a patent on this process demanding a licensure fee that would amount to approximately \$20 million per year.¹²⁰ This patent allows the

in Boston, Ma. (Mar. 22, 2003).

113. Interview with Anonymous, Senior Vice President, State Street Corporation, in Boston, Ma. (Mar. 22, 2003).

114. *Id.*

115. *Id.* Most mutual funds calculate a price, or Net Asset Value (NAV) on a daily basis. A timely NAV is critical to allow investors to contribute funds or redeem out of a fund. If the proprietary method for obtaining the NAV is challenged by Signature, it is possible that a court could issue an injunction that would prevent a fund using the Hub and Spoke from producing or reporting a price, thereby destroying the liquidity and marketability of the fund. *Id.*

116. See Graham Smale, *The Idiot’s Guide to the Black Option Pricing Model*, THE SOUTHERN AFRICAN TREASURER, Sep. 2000.

117. *Id.*

118. Aaron Lucchetti, *Patent Poses Problem for Amex Exchange-Traded Funds*, WALL ST. J., Sep. 20, 2000, at C1; U.S. Patent No. 5,806,048 (issued Sep. 8, 1998); U.S. Patent No. 6,088,685 (issued Jul. 12, 2000).

119. Lucchetti, *supra* note 108.

120. *Id.*

inventors to hold the AMEX hostage and essentially extort a licensure fee of their choosing.¹²¹

The concern over *State Street* is that the scope of what is patentable subject matter has been widened too much. As one columnist put it, "If your mathematical formula has a practical end, you can probably patent it."¹²² For example, there are patents for how to hold a golf putter or how to allocate assets in a divorce settlement.¹²³ There is even a patent on a method of applying for a patent.¹²⁴ The fall out from *State Street* has created, "a gold-rush mentality toward patents and litigation in which companies . . . gobble up patents on anything and everything."¹²⁵ According to Gregg Aharonian, publisher of Internet Patent Service, a website that conducts patent searches, "It is a mad rush to get as many dumb patents as possible."¹²⁶ The knee-jerk reaction by many in the financial services industry, who were neophytes in patent law, was to just patent everything.¹²⁷

The subsequent rush to patent has caused a patent flood on business patents.¹²⁸ In the year 2000, business method patent applications rose to 7,500, an increase of 700% from the 925 applications in 1997, the year before the *State Street* decision.¹²⁹ The Patent and Trademark Office (PTO) has been more lax in granting these patents, granting about 1,000 patents in 2000, contrasted with

121. *Id.*

122. Teresa Riordan, *An appeals court says a mathematical formula can be patented, if it is a moneymaker*, N.Y. TIMES, Aug. 3, 1998, at D2.

123. Teresa Riordan, *Patents Considered Vital to Thrive on the Internet*, N.Y. TIMES, Dec. 20, 1999, at C39.

124. Samar Farah, *The war over patents on the Web: Who owns an idea?*, THE CHRISTIAN SCIENCE MONITOR, Jul. 27, 2000, at 15.

125. Neil F. Carlson, *Developing Business Process Patents and Intellectual Property*, STRATEGIC FINANCE, Nov. 1, 2000, at 65. The *State Street* decision created a kind of panic amongst those in the financial services industry, and fostered fear that many of the methods that were thought to be proprietary can actually be used by competitors.

126. Gordon Black, *Would-be web giants go a little patent-happy*, SEATTLE TIMES, Nov. 7, 1999, at F1.

127. Many lawyers began to urge their financial service clients to seek patent protection on many of their products and services. See Bloomberg News, *High Court Declines to Review Ruling Seen as Software Boon*, N.Y. TIMES, Jan. 12, 1999, at C6.

128. Michael J. Meurer, *Business Method Patents and Patent Floods*, 8 WASH. U. J.L. & POL'Y 309, 309 (2002) (defining a "patent flood" as occurring when many inventors apply for patents on similar inventions during a compressed period of time).

129. John Hackett, *Software Patent*, BANK TECHNOLOGY NEWS, Mar. 2001, at 25.

only 205 in 1997.¹³⁰ Patent floods create problems in that they deluge the PTO with applications, which causes lower quality patents to slip through.¹³¹ This eventually creates problems with licensing and enforceability, and ultimately leads to more litigation. The increase in litigation in turn has a negative effect on the industries that are the subject matter of these patents, such as the finance industry.¹³² Shortly after this boom started, the PTO began to hire more patent examiners and continues this expansion.¹³³

The financial industry is particularly affected by this need to patent.¹³⁴ Prior to *State Street*, financial services businesses never felt the need to protect their software and methods with patents, and as a result, there is very little judicial guidance on financial service patent issues.¹³⁵ In a speech given by Deputy Commissioner of Patents and Trademarks Q. Todd Dickinson, he said that banks and other businesses are not accustomed to dealing with patents, “but they will come to understand the value of patent protection.”¹³⁶ This absence of patents in the financial industry is partly due to the nature of the products themselves.¹³⁷ Many financial methods involve human expertise and management, which is more of a trade secret concern than a patent issue.¹³⁸ With the automation of many processes, however, particularly through the use of computer software, the need for patents has increased.¹³⁹

It is likely that the *State Street* decision was partly in response to the advent of new technology in the areas of finance and e-commerce. This decision would have had a muted effect if it came down thirty years ago, but in today’s technologically dependent industries, it is very far reaching. Those with an interest in intellectual property law widely agree that this decision in 1998 coincided with the “Dot Com” boom, and that this case was not

130. *Id.*

131. Meurer, *supra* note 127, at 322-27.

132. *Id.*

133. Tony V. Pezzano, *State Street Court Case Opens New World for Tech Patents*, SECURITIES INDUSTRY NEWS, Jan. 18, 1999, at 2.

134. See Jerry Ackerman, *Ruling seen kicking off a new era in accounting*, THE BOSTON GLOBE, Aug. 5, 1998, at F4.

135. *Patents for Financial Products Backed*, THE REGULATORY COMPLIANCE WATCH, Aug. 10, 1998, at 1. These matters usually were negotiated through licensing agreements, rather than patent litigation. *Id.*

136. *Id.*

137. Dave Kovalski, *Ownership Stamp: Patents for investment processes still unusual; Father and son are among the few recipients*, PENSIONS AND INVESTMENTS, Apr. 17, 2000, at 3.

138. *Id.*

139. *Id.*

decided based on the law or on the merits, but merely policy. The Federal Circuit Court of Appeals was likely concerned about the patentability of software and related technology more than the impact on the financial industry. State Street Corporation was merely a sacrificial lamb in a judicial effort to change the law and shape the policy of intellectual property rights.

The court attempted to clarify the area of business methods, but instead, the result has been to muddy the waters and create more uncertainty. The simple fact is that prior to this case, the financial industry was doing just fine. The overall effect to corporations in the industry has been an increase in costs.¹⁴⁰ Corporations must now obtain the services of patent attorneys to examine their products, processes and methods for intellectual property issues. Patent litigation will increase which is very expensive to initiate and defend. In addition, there has been a substantial increase in nuisance cases by smaller companies who seek wealth by bringing patent infringement suits against larger companies.¹⁴¹

A. Recent Response to the Patent Flood

Both the United States Patent and Trademark Office (USPTO) and Congress have responded to the concerns over the patent flood that followed the State Street decision.¹⁴² The USPTO held several symposiums and sought public comment to deal with this problem.¹⁴³ As a result, the USPTO has updated its patent examining procedure so that business method patents are now subject to special scrutiny.¹⁴⁴ This change in procedure has caused a drastic reduction in the number of business method patents being issued and calls into question the enforceability of the patents hastily issued during the

140. Interview with Anonymous, Senior Vice President, State Street Corporation, in Boston, Ma. (Mar. 22, 2003).

141. *Id.*

142. Interview with William L. Patton, Litigation Partner, Ropes & Gray, in Boston, Ma. (Jun. 18, 2003). Mr. Patton represented State Street Corporation in the State Street v. Signature Financial case, *State St. Bank & Trust Co. v. Signature Fin. Group Inc.*, 149 F.3d 1368 (Fed. Cir. 1998).

143. Press Release, United States Patent and Trademark Office, Under Secretary of Commerce for Intellectual Property Dickinson unveils new initiative focusing on business method patents (Mar. 30, 2000) (on file with author) *available at* <http://www.uspto.gov/web/offices/com/speeches/00-22.htm>; Press Release, United States Patent and Trademark Office, USPTO seeks public comment on prior art sources for business method patents (Jun. 12, 2001) (on file with author) *available at* <http://www.uspto.gov/web/offices/com/speeches/01-25.htm>.

144. MANUAL OF PATENT EXAMINING PROCEDURE § 2106 (Patent and Trademark Office, U.S. Department of Commerce, 8th Ed. 2001).

years of the patent flood.¹⁴⁵

Congress responded in 2000 by introducing the Business Method Improvement Act that amends Section 102 of Title 35 of the United States Code.¹⁴⁶ This legislation, sponsored by Representative Howard L. Berman, seeks to protect inventors and the public by enhancing the prior art defense.¹⁴⁷ This statute allows inventors who were first-users of an invention an administrative challenge to the validity of a business method patent.¹⁴⁸ It is not clear as of this writing whether this statute has yet been utilized.¹⁴⁹

B. To Patent or Not

Prior to 1998, the world of finance was ill-equipped to handle patent issues on their products, mostly because they never had to.¹⁵⁰ The financial industry is extremely competitive in the quality of the products and services offered by various companies. Now companies are looking to patent rights as a way to bolster their image and outrun their competitors.¹⁵¹ Intellectual property rights are now seen as a major asset for these companies. Obtaining a patent on a financial product first can be a way to beat the competition, and also as a potential source of revenue from royalties.¹⁵²

One partner at a law firm recommends that financial companies examine all their systems and determine whether any of their processes infringe on any patents.¹⁵³ Some lawyers say banks should patent all the processes they use to manage portfolios, like in *State Street*.¹⁵⁴ Indeed, after 1998, most companies have performed an audit of all their processes and methods to determine what their patent issues and concerns are.¹⁵⁵ The results show that many of these methods or processes are entrenched and confounded within systems

145. Interview with William L. Patton, *supra* note 130.

146. *Id.*

147. Business Method Patent Improvement Act of 2000, H.R. 5364, 106th Cong. (2d Sess. 2000) (statement of Rep. Berman) (enacted), *available at* <http://www.house.gov/berman/floor/100300.htm>

148. *Id.*

149. *Id.*

150. Interview with Anonymous, Senior Vice President, State Street Corporation, in Boston, Ma. (Mar. 22, 2003).

151. See Robert Whalen, *Electronic Bidding: Chicago-Based Dark Horse Makes Run at Patent Sale*, THE BOND BUYER, Jan. 27, 1999, at 30.

152. *Id.*

153. Jaret Seiberg, *Ruling Threatens Banks With Patent Lawsuits*, AMERICAN BANKER, Sep. 2, 1998, at 3.

154. *Id.*

155. Interview with Anonymous, Senior Vice President, State Street Corporation, in Boston, Ma. (Mar. 22, 2003).

and processes that are at the very core of many of these company's services.¹⁵⁶ Other industries, such as pharmaceutical or biotech companies have long been cognizant of the patent issues that surround their products. The problem is that due to the common practice of sharing methods and products throughout the financial industry, many companies have found that it is too late to patent these methods due to the prior art exception.¹⁵⁷

Once the audit is completed and the patent issues have been identified, a decision will have to be made whether to patent and seek to protect certain methods, or whether to pursue infringement suits against competitors who use similar processes. Like every decision in business, legal rights and entitlements will be set aside and the decision to proceed will be based on cost. In other words, does the cost of pursuing these claims outweigh the costs of acquiescing and allowing competitors to duplicate or improve upon them?

The first assessment to be made is to determine the importance or critical nature of the method or process that the company seeks to protect. This must be weighed with the cost of applying for and seeking a patent, or pursuing an infringement suit. The chief concern for a company should not be obtaining the patent, as the patent flood of the late 1990's has deluged the patent office and made it relatively easy to obtain a business method patent.¹⁵⁸ The critical issue becomes the predictability of successfully enforcing these patent rights. In 1998, the *State Street* case wiped away prior case law on business method patents, and since then there still is a dearth of case law pertaining to this issue. As a result of the patent flood and criticism of the case, courts may seek to narrow the *State Street* decision in future cases, and it is difficult if not impossible to predict how courts will handle these issues in the future.

VII. CONCLUSION

The future of business method patents is unknown. The law changed dramatically in 1998, and it is difficult to determine the direction that it will next take. What is clear is that there have been a host of problems associated with this decision, from a patent flood, to

156. See Russ O'Haver & Ellen Rodgers, *Financial Services Companies Should Protect Their 'Core Intangibles'*, Ernst & Young, at http://www.ey.com/global/Content.nsf/International/Financial_Service_Companies_Should_Protect_Their_Core_Intangibles.

157. Interview with Anonymous, Senior Vice President, State Street Corporation, in Boston, Ma. (Mar. 22, 2003).

158. See Michael J. Meurer, *Business Method Patents and Patent Floods*, 8 WASH. U. J.L. & POL'Y 309, 322-27.

increased patent litigation, to increased costs of doing business. It is unclear whether this backlash is simply natural growing pains that will abate in the coming years as businesses and courts digest and resolve *State Street*, or whether it is a deeper, more permanent problem.

At the present time, it behooves all of those in the financial industry to carefully examine all of their past, present and future intellectual property issues. While many of these older and widely used methods may not be patentable due to the prior art exception, newer methods may. As a result, corporations should revise their standard operating procedures to be more sensitive to intellectual property and trade secret issues, and should educate and alert those within their organizations.