
NOTES

THE FUTURE OF BUSINESS METHOD SOFTWARE PATENTS IN THE INTERNATIONAL INTELLECTUAL PROPERTY SYSTEM

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I. INTRODUCTION

When the Federal Circuit Court of Appeals decided *State Street Bank & Trust Co. v. Signature Financial Group, Inc.*¹ in 1998, many commentators hailed it as a victory for computer-based technology firms and Internet-based businesses.² The barriers to patenting computer-based business models had fallen, as the case explicitly struck down the long-standing “business method” exception and severely limited the mathematical algorithm exception in U.S. patent law.³ Generally, the business method exception held that a method of doing business was an unpatentable subject matter. The mathematical algorithm exception generally prevented computer programs that consisted of a mathematical algorithm from being patented.

* Class of 2002, University of Southern California Law School; B.A. 1998, University of Southern California. The author would like to thank Professor Daniel Klerman for advising on this Note. In his Intellectual Property class, Professor Klerman called on the author to remark on the normative values of business method patents and unknowingly provided the inspiration for this Note. The author would also like to thank Professor Paul Edward Geller for introducing him to the intricate world of international intellectual property.

1. 149 F.3d 1368 (Fed. Cir. 1998).

2. See, e.g., John M. Carson & Eric M. Nelson, *Legal Victory for Electronic Commerce Companies: State Street Bank & Trust v. Signature Financial Group Signals Fall of Last Barrier to Internet Software Patents*, 21 T. JEFFERSON L. REV. 193, 198 (1999).

3. See *State St. Bank & Trust Co.*, 149 F.3d at 1373–75.

Hence, today's computer-based technology firms and Internet-based businesses can, in theory, seek even stronger intellectual property protections for their computer-based innovations. In fact, since the *State Street* decision, new inventors in the e-commerce age have been rushing to the United States Patent and Trademark Office ("PTO") to obtain patents for their business-related inventions. Patents have already issued for processes such as Internet search methods, delivery of postage, Internet server access control and monitoring systems, electronic shopping carts, Internet auctions, and Internet keyword search services.⁴

As e-commerce companies raced to the PTO, many American commentators have questioned the wisdom of allowing computer-based business methods to be patented.⁵ The ramifications of the new American category of patents, however, have not been localized to the United States. In fact, American entrepreneurs have moved overseas in an attempt to find some patent protection for their computer-based business methods in foreign territories as well. This trend has sparked controversy and discussion overseas by compelling foreign countries to consider to what extent their domestic patent laws should protect computer-implemented business methods or whether their laws should protect such methods at all.⁶ Currently, many European countries explicitly deny patent protection to business methods or business models.⁷ Because the United States is a major economic entity in the world economy, many questions inevitably arise as to what consequences will result from its recognition of patentable business methods in the over-arching international intellectual property system. Specifically, it is unclear how business methods patents will be

4. See William D. Wiese, *Death of a Myth: The Patenting of Internet Business Models After State Street Bank*, 4 MARQ. INTELL. PROP. L. REV. 17, 27-29 (2000).

5. See generally Rochelle Cooper Dreyfuss, *Are Business Method Patents Bad For Business?*, 16 SANTA CLARA COMPUTER & HIGH TECH. L.J. 263, 267 (2000) (seeing difficulties concerning the quality of business patents issuing and the recognition of exclusivity in competitive processes); Leo J. Raskind, *The State Street Bank Decision: The Bad Business of Unlimited Patent Protection for Methods of Doing Business*, 10 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 61, 64 (1999) (arguing that business method patents have the ability to hamper competition in the free market and thus should receive stronger scrutiny than other patentable innovations); John R. Thomas, *The Patenting of the Liberal Professions*, 40 B.C. L. REV. 1139, 1141 (1999) (arguing that business methods should not be characterized as technological in nature and therefore should not truly receive patent protection); Francisc Marius Keeley-Domokos, *State Street Bank & Trust Co. v. Signature Financial Group, Inc.*, 14 BERKELEY TECH. L.J. 153, 167-69 (1999) (arguing that a traditional cost-benefit analysis used to justify the limited monopoly granted under the patent system does not support the granting of patents to methods of doing business).

6. See discussion *infra* Part III.B.

7. See *infra* note 116 and accompanying text.

viewed in the context of the large multilateral treaties that govern many aspects of international intellectual property.

This Note will attempt to address some of the issues that will arise in the international intellectual property system with respect to computer-based business methods.⁸ First, in Part II, this Note will briefly examine the history of America's domestic patent statutes and precedents that once denied patent protection to such devices. Specifically, Part II will examine the legal arguments that formed the key limiting concepts that barred patent protection for computer-based business models. Part II will then demonstrate how the *State Street* decision affected these concepts and opened the door to patent protection. Finally, Part II will discuss the immediate effects of the decision both in the United States and abroad.

Second, in Part III, this Note will demonstrate that the current international intellectual property system will be unlikely to protect computer-based business methods, thus leaving a major incongruity in the international system. Part III will also demonstrate how such incongruities may detrimentally affect the international intellectual property system by examining how current American patent laws could adversely impact a foreign e-commerce company. Finally, this Part will argue that the international intellectual property system should attempt to remedy the current situation.

Part IV will examine the possible forms of protection available to business method software in the international intellectual property system. Specifically, this Part will argue that the international intellectual property system should not protect computer-based business methods through patent or patent-like systems. Rather, the international system should provide protection only to the extent that it adequately remedies the root problem of under-protection that inventors of such innovations face. Finally, this Note will argue that the best form of protection should be similar to proposed forms of protection for other new patent regimes around the world.

II. THE HISTORY AND EFFECTS OF THE *STATE STREET* DECISION

In order to comprehend the ramifications of protectable computer-based business models in the international system, it is important to understand how such models became legitimate objects of patent

8. Of course, many other issues are bound to arise with this topic, and I can only hope that this Note addresses the most glaring issues at hand. I am confident, however, that other professionals who have dedicated their life's work to international intellectual property will flush out and grapple with the issues upon which this Note only lightly touches.

protection. Furthermore, it is important to note the immediate domestic and international effects of the *State Street* decision as well as any trends that such effects may signal.

A. THE UNITED STATES PATENT SYSTEM

The patent system in the United States springs from a specific grant of power given to Congress in the Constitution. Article I, Section 8 of the Constitution grants Congress the explicit power to “promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries.”⁹ Congress implemented this power by creating a patent protection system codified in Title 35 of the United States Code.¹⁰ Congress has enacted several versions of the Patent Act, the most recent major revision being the Patent Act of 1952.¹¹

Under the current patent system, any invention or patent application¹² must pass the requirements of novelty,¹³ nonobviousness,¹⁴ utility,¹⁵ and enablement.¹⁶ The Patent Act also provides a threshold inquiry as to whether the invention or patent application claims certain subject matters that are expressly unpatentable. The current act enumerates four general

9. U.S. CONST. art. I, § 8, cl. 8.

10. See Patent Act, 35 U.S.C. §§ 1–376 (1994).

11. See Patent Act of July 19, 1952, ch. 950, 66 Stat. 792, Pub. L. 82-593 (codified at 35 U.S.C. §§ 1–376 (1994)).

12. An inventor who wishes to obtain a patent for an invention in the United States must apply for a patent with the Patent and Trademark Office. See ROBERT P. MERGES, PETER S. MENELL & MARK A. LEMLEY, *INTELLECTUAL PROPERTY IN THE NEW TECHNOLOGICAL AGE* 131 (2d ed. 2000). During the application period—known as prosecution—a patent examiner at the PTO evaluates the application and, after numerous negotiations, decide to reject or accept the application based upon a number of sections of the Patent Act. See *id.* at 134. If the application is accepted, a patent is granted to the inventor, and all the rights of a patent holder under the Patent Act are bestowed upon the inventor. See *id.* at 133–35. The U.S. courts only become involved in the patent process when other inventors or those accused of infringing the patent challenge the validity of the original patent. See *id.* at 136. Third parties may also challenge the patent through the PTO by a process known as patent reexamination if a substantial new basis for questioning the patentability of the invention arises after issuance of the patent. See *id.* at 135.

13. The invention may not receive a patent if 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 date of invention by the patent applicant. 35 U.S.C. § 102(a). This requirement is commonly called the novelty requirement. See *id.*

14. The invention may not receive a patent if a person skilled in the art to which the subject matter pertains would deem the innovation of the invention to be obvious. *Id.* § 103. This requirement has been labeled the nonobvious requirement. *Id.*

15. See *id.* § 101.

16. See *id.* § 112.

categories of patentable subject matter: “process, machine, manufacture, or composition of matter.”¹⁷

Historically, the Patent Act did not delineate any specific statutory limitations on patentable subject matter besides those enumerated categories. Courts, however, began to craft their own judicial exceptions to patentability from very early on. In 1874, the Supreme Court articulated the fundamental rule that abstract ideas are not patentable; rather, only new devices that make such ideas practical and useful are.¹⁸ Furthermore, the Court endorsed the rule that laws of nature and physical phenomena are not patentable subject matter.¹⁹ For example, in *Diamond v. Chakrabarty*, the Court stated, “Einstein could not patent his celebrated law that $E=mc^2$; nor could Newton have patented the law of gravity. Such discoveries are ‘manifestations of . . . nature, free to all men and reserved exclusively to none.’”²⁰

Lower courts have adopted other limiting doctrines dealing with more specific exceptions to the subject matter of patents.²¹ Thus, although the Supreme Court has construed § 101 to “include anything under the sun that is made by man,” the Court has noted that § 101 does indeed have some boundaries created by the judicial evolutionary process.²²

B. THE JUDICIAL EXCEPTIONS BARRING COMPUTER-BASED BUSINESS METHODS FROM PATENT PROTECTION

The judicially crafted bars to patent protection for computer-based business methods came in two forms: the business method exception and the mathematical algorithm exception. The business method exception worked to block process patents that claimed a general process or method of conducting business while the mathematical algorithm exception worked to deny protection to computer programs.

1. The Business Method Exception

The business method exception was established in 1908, when the Second Circuit Court of Appeals decided *Hotel Security Checking Co. v.*

17. *Id.* § 101.

18. *See Rubber Tip Pencil Co. v. Howard*, 87 U.S. (20 Wall.) 498, 507 (1874).

19. *See Diamond v. Chakrabarty*, 447 U.S. 303, 309 (1980).

20. *Id.* (quoting *Funk Bros. Seed Co. v. Kalo Inoculant Co.*, 333 U.S. 127, 130 (1948)).

21. *See discussion infra* Part II.B.

22. *Chakrabarty*, 447 U.S. at 309 (quoting S. REP. NO. 82-1979, at 5 (1952); H.R. REP. NO. 82-1923, at 6 (1952)).

*Lorraine Co.*²³ In striking down a patent grant for a system of financial accounting designed to prevent fraud by restaurant waiters and cashiers, the court stated that 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.”²⁴ The court, however, did not provide any further justifications for the business method exception other than its declaration that transacting business was not an art.²⁵ Instead, the court implicitly tied this exception to the abstract idea exception by stating, “No mere abstraction, no idea, however brilliant, can be the subject of a patent irrespective of the means designed to give it effect.”²⁶ In further clouding the issue of the business method exception, the court seemingly rested its analysis on the grounds of novelty rather than the business method exception.²⁷

Another notable case endorsing the business method exception was *Loew’s Drive-In Theatres, Inc. v. Park-In Theatres, Inc.*²⁸ The patent at issue claimed a system for arranging and designing a drive-in movie theater parking lot, such that people sitting in their cars could view the screen without obstruction from other cars parked closer to the screen or moving in and out of the lot.²⁹ At the outset of the discussion, the court noted that a system of transacting business was patentable not on its own, but rather only in conjunction with the means of making the system practically useful.³⁰ The court, however, also rested its ruling on the more concrete element of novelty in striking down the patent.³¹

The court’s actions in *Loew’s* and *Hotel Security*, while seemingly sound in legal reasoning, would form the basis of a major argument against the business method exception. Commentators and judges alike would

23. 160 F. 467 (2d Cir. 1908).

24. *Id.* at 469. Note that the statute at the time of the decision listed the categories of patentable subject matter as art, machine, manufacture, or composition of matter. *Id.* The term “process” was substituted for the term “art” in 1952. 35 U.S.C. § 101 (1994).

25. *See Hotel Security Checking Co.*, 160 F. at 469.

26. *Id.* (quoting *Fowler v. City of New York*, 121 F. 747, 748 (2d Cir. 1903)).

27. “It is unnecessary to multiply authorities as we are convinced that there is no patentable novelty either in the physical means employed or in the method described and claimed . . .” *Id.* at 472.

28. 174 F.2d 547 (1st Cir. 1949).

29. *See id.* at 550.

30. *See id.* at 552.

31. *See id.* “[T]here is nothing inventive in adapting the old arcuate arrangement of seats in a theatre to automobiles in a parking lot as the means to achieve horizontal pointing.” *Id.*

argue that the exception had no teeth because the courts endorsing it never employed it to strike down a patent.³²

2. The Mathematical Algorithm Exception

By most accounts, three Supreme Court cases commonly known as the Supreme Court trilogy established the mathematical algorithm exception.³³ Like the business method exception, the doctrine has its roots in the abstract idea exception in the form of three basic principles. First, a patent claim that sought protection for a mathematical formula in the abstract was not valid.³⁴ Second, claims that involved algorithms could be patented only if the algorithm had been reduced to some useful application.³⁵ Thus, if a claim containing a mathematical formula implemented or applied that formula in a process that the patent laws were designed to protect, the claim satisfied § 101 for patentable subject matter.³⁶ Third, the useful application of the algorithm had to work to physically transform or reduce an article to a different state or thing.³⁷ Consequently, all software patents that incorporated mathematical algorithms had to satisfy the transformation inquiry.³⁸

In practice, however, courts would instead apply the Freeman-Walter-Abele test in order to determine whether the claimed subject matter was an unpatentable abstract idea. The test has been articulated as follows:

First, the claim is analyzed to determine whether a mathematical algorithm is directly or indirectly recited. Next, if a mathematical algorithm is found, the claim as a whole is further analyzed to determine whether the algorithm is “applied in any manner to physical elements or process steps,” and, if it is, it “passes muster under § 101.”³⁹

32. See, e.g., *In re Schrader* 22 F.3d 290, 298 (Fed. Cir. 1994) (Newman, J., dissenting); *State St. Bank & Trust Co. v. Signature Fin. Group, Inc.*, 149 F.3d 1368, 1375 (Fed. Cir. 1998).

33. See, e.g., *State St. Bank & Trust Co. v. Signature Fin. Group, Inc.*, 927 F. Supp. 502, 508 (D. Mass. 1996) (stating that *Gottschalk v. Benson*, 409 U.S. 63 (1972), *Parker v. Flook*, 437 U.S. 584 (1978), and *Diamond v. Diehr*, 450 U.S. 175 (1981) discussed the scope of patent protection that ought to be afforded computer software), *rev'd*, 149 F.3d 1368 (Fed. Cir. 1998).

34. See *Diamond v. Diehr*, 450 U.S. 175, 191 (1981).

35. See *In re Alappat*, 33 F.3d 1526, 1543 (Fed. Cir. 1994).

36. See *id.*

37. See *Diehr*, 450 U.S. at 192.

38. See Claus D. Melarti, Note, *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, 368 (1999).

39. *State St. Bank & Trust Co. v. Signature Fin. Group, Inc.*, 149 F.3d 1368, 1374 (Fed. Cir. 1998) (quoting *In re Pardo*, 684 F.2d 912, 915 (C.C.P.A. 1982)).

Therefore, in order to invalidate a patent under the mathematical algorithm exception, one had to demonstrate that the algorithms were “merely abstract ideas constituting disembodied concepts or truths that are not ‘useful.’”⁴⁰ In other words, the “usefulness” of an algorithm’s claim determined the validity of the patent. Furthermore, the concept of “usefulness” seemed limited to processes affecting the natural, physical world, and excluded more intangible worlds, such as numbers or prices.

The Freeman-Walter-Abele test resulted in courts upholding process patents that employed mathematical algorithms in a technical field, but striking down process patents that utilized algorithms in more intangible, business-related fields.⁴¹ For example, the court in *In re Alappat* upheld the patent claim for a machine that employed an algorithm to transform an electric input signal into a smooth waveform displayed on a monitor.⁴² The court held that the mathematical formula in the invention met the transformation requirement because it transformed electric data into a visual waveform display.⁴³ By comparison, the court in *In re Schrader* held that a patented method claiming an algorithm that transformed bid prices into new groupings of bid prices failed the test because number conversion did not represent a physical transformation.⁴⁴ Because business method computer programs likely involved the transformation of financial data into other useful financial data, such programs were unlikely to gain protection under pre-*State Street* analysis, regardless of whether the patent claimed the overall business method.

3. Initial Effects of the Exceptions on Computer-Based Business Methods

Although neither exception was a dominant force in the denial of patents by courts, their presence and force in the patent law doctrine possibly prevented inventors from even attempting to seek a patent for a computer-based business method. Because the business method exception only allowed an inventor to claim the device for implementing a business

40. *Id.* at 1373.

41. *See, e.g., In re Alappat*, 33 F.3d 1526, 1544 (holding that an algorithm that transformed electric input signals into a smooth waveform display on a monitor was useful, and hence, patentable); *Arrhythmia Research Tech., Inc. v. Corazonix Corp.*, 958 F.2d 1053, 1060–61 (Fed. Cir. 1992) (holding that a device that converted electrocardiograph signals using mathematical calculations into output information about heart activity was a useful and, hence, patentable application); *In re Schrader*, 22 F.3d 290, 291, 294 (Fed. Cir. 1994) (denying patent because method of recording and regrouping bid prices for land so as to maximize seller revenue did not involve any physical transformation).

42. *Alappat*, 33 F.3d at 1544–45.

43. *See id.*

44. *See Schrader*, 22 F.3d at 294.

method, the focus turned to the patentability of the implementing device.⁴⁵ If that device included a computer using a computer program, the device risked invalidation under the mathematical algorithm exception if the algorithm at issue did not affect some physical process. A further deterrent for inventors seeking to patent their computer-based business models was the PTO's own policies regarding business methods. As recently as 1994, the PTO's Manual of Patent Examining Procedure instructed its examiners that, "[t]hrough seemingly within the category of a process or method, a method of doing business can be rejected as not being within the statutory classes."⁴⁶

Thus, an inventor whose computer program could be classified as both a business model and a mathematical algorithm would be wary about the initial outlay of money and resources in the long and often arduous patent prosecution system if the likelihood of gaining patent protection was highly speculative. In fact, inventors may have decided that the wiser path to patent protection was through other avenues, such as trade secret law. Thus, the lack of previous patent applications for business-related software may have resulted more from the inventors' own self-imposed fear of financial loss than from the actual operation of patent law.

C. THE *STATE STREET* DECISION

In the 1998 decision of *State Street Bank & Trust Co. v. Signature Financial Group, Inc.*,⁴⁷ the Federal Circuit abolished the business method exception and limited the mathematical algorithm exception to a status approaching complete irrelevance in modern patent law.⁴⁸ The patent in the *State Street* case involved a computer-based system that allowed a financial administrator to monitor and record the flow of financial information, and then make calculations to maintain a financial services configuration, termed the "Hub and Spoke" system.⁴⁹ The district court ruled in a summary judgment that the patent was invalid because it targeted nonstatutory subject matter, as it claimed both a business method and a mathematical algorithm.⁵⁰

45. See *Loew's Drive-In Theatres, Inc. v. Park-In Theatres, Inc.*, 174 F.2d 547, 552 (1st Cir. 1949).

46. MANUAL OF PATENT EXAMINING PROCEDURE § 706.03(a) (5th ed. 1994).

47. 149 F.3d 1368 (Fed. Cir. 1998).

48. See Melarti, *supra* note 38, at 385-86.

49. See *State St. Bank & Trust Co.*, 149 F.3d at 1371.

50. See *State St. Bank & Trust Co. v. Signature Fin. Group, Inc.*, 927 F. Supp. 502, 516 (D. Mass. 1996), *rev'd*, 149 F.3d 1368 (Fed. Cir. 1998).

On appeal, the Federal Circuit reversed the lower court's decision and held that the patent did claim proper subject matter.⁵¹ In deciding the case, the court boldly eliminated the business method exception by stating:

We take this opportunity to lay this ill-conceived exception to rest. Since its inception, the 'business method' exception has merely represented the application of some general, but no longer applicable legal principle Since the 1952 Patent Act, business methods have been, and should have been, subject to the same legal requirements for patentability as applied to any other process or method.⁵²

The court reasoned at the outset that the language of § 101 indicated Congress' intent not to place restrictions on subject matter patentability beyond those enumerated in § 101.⁵³ Thus, the business method exception was an improper expansion of the statute beyond the original legislative intent.⁵⁴ The court also reasoned that the business method exception should have been discarded as being error-prone, obsolete, and redundant.⁵⁵ The court left little room for doubt or argument in its language as to the future of the business method exception. As one commentator noted, "[w]hat is clear and unqualified is that business methods are now statutory subject matter in full parity with other innovative activity."⁵⁶

The court also found that the patent properly claimed a mathematical algorithm. The court ruled as an initial matter that "the transformation of data, representing discrete dollar amounts, by a machine through a series of mathematical calculations into a final share price, constitutes a practical application of a mathematical algorithm . . . because it produces 'a useful, concrete and tangible result.'"⁵⁷ Furthermore, "the mere fact that a claimed invention involves inputting numbers, calculating numbers, outputting numbers, and storing numbers, in and of itself, would not render it nonstatutory subject matter."⁵⁸ In so ruling, the court explicitly opened the door for business software patents by requiring that any algorithms contained in the programs need only produce a useful result that could be "expressed in numbers, such as price, profit, percentage, cost, or loss."⁵⁹

51. See *State St. Bank & Trust Co.*, 149 F.3d at 1377.

52. *Id.* at 1375.

53. See *id.* at 1373.

54. See *id.*

55. See *id.* at 1375 n.10 (citing *In re Schrader*, 22 F.3d 290, 298 (Fed. Cir. 1994) (Newman, J., dissenting)).

56. Raskind, *supra* note 5, at 62.

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

58. *Id.* at 1374.

59. *Id.* at 1375.

Finally, the court “drove the last nail into [the Freeman-Walter-Abele test’s] coffin”⁶⁰ by stating that the test had “little, if any, applicability”⁶¹ in determining patentable subject matter.

The doctrinal results of the *State Street* case bode well for businesses and the makers of business method software. With the mathematical algorithm exception all but extinct, inventors may now patent computer programs that employ algorithms to produce useful, numerical information such as prices, profits, percentages of losses, and costs. Furthermore, with the business method exception obliterated, inventors may patent the entire business process carried out by the computer program—not just the software that implements the process. Consequently, the patent holder has a greater scope of protection, and thus a greater monopoly in that field.

D. *STATE STREET*: A MOVE TOWARDS PATENTING EVERYTHING UNDER THE SUN?

In retrospect, the *State Street* holding should not have been very surprising. The decision and its practical effects are consistent with a trend in international intellectual property systems towards granting patent or patent-like protection to previously unpatentable subject matter. For example, the most recent large multilateral international intellectual property convention has provided specific protection for subject matters that had originally lacked patent or copyright protection, such as layout designs of integrated circuits and plant varieties.⁶²

Evidence of a shift toward a more inclusive patent system could also be found in the United States well before the *State Street* decision. For instance, in 1994, Judge Newman foreshadowed the *State Street* decision in his sharply critical dissent to the majority analysis of *In re Schrader*.⁶³ Two years later, the PTO itself echoed elements of the shifting trends by reversing its position on the business method exception. The 1996 Examination Guidelines for Computer-Related Inventions stated that “[o]ffice personnel have had difficulty in properly treating claims directed

60. Melarti, *supra* note 38, at 386.

61. *State St. Bank & Trust Co.*, 149 F.3d at 1374.

62. See J.H. Reichman, *Charting the Collapse of the Patent-Copyright Dichotomy: Premises for a Restructured International Intellectual Property System*, 13 CARDOZO ARTS & ENT. L.J. 475, 500–02 (1995).

63. See *In re Schrader*, 22 F.3d 290, 296–99 (Fed. Cir. 1994) (disagreeing with view of subject matter as nonstatutory in terms of 35 U.S.C. § 101).

to methods of doing business”⁶⁴ and that, therefore, such “[c]laims should not be categorized as methods of doing business [but instead] should be treated like any other process claims, pursuant to [the] Guidelines.”⁶⁵ Although the examination guidelines did not have the force of law, the implications of that new policy seemed to be indicative of a larger trend in American patent law at that time—a trend away from an exclusionary approach and toward a more protectionist and inclusive approach.⁶⁶

Therefore, the *State Street* case may have been the culmination of that trend towards increased patent protection for innovative processes regardless of the method used to implement that process. In essence, *State Street* may have signaled a move towards a patent system that will potentially protect “anything under the sun that is made by man.”⁶⁷

E. THE EFFECTS OF *STATE STREET*: A DECISION HEARD AROUND THE WORLD?

Almost four years have passed since the *State Street* decision, and some of the effects can be seen today in the United States and around the world. Unfortunately, empirical data is not yet available on the economic effects of business method patents because of their only recent acceptance in the American patent system.⁶⁸ Other, more noticeable or traceable effects, however, have surfaced in both the domestic and foreign arenas.

1. Domestic Effects and Reactions

First, the number of patent applications in the United States dealing with computer-implemented business methods have increased in the last three years.⁶⁹ In 1999, the PTO tracked a strong growth in computer-based

64. Examination Guidelines for Computer-Related Inventions, 61 Fed. Reg. 7478, 7479 (Feb. 28, 1996).

65. *Id.*

66. *See id.*

67. *Diamond v. Chakrabarty*, 447 U.S. 303, 309 (1980) (quoting S. REP. NO. 82-1979, at 5 (1952); H.R. REP. NO. 82-1923, at 6 (1952)).

68. *See Raskind, supra* note 5, at 78.

69. *See* United States Patent and Trademark Office, *White Paper: Automated Financial or Management Data Processing Methods (Business Methods)* Part III.D, at 7, available at <http://www.uspto.gov> [hereinafter *White Paper*]. In order to track, log, and examine all the patent applications filed with the PTO each year, the office groups the patent applications into numerous classes based upon the type of invention the application attempts to claim. *See id.* Part III.A, at 5. Concurrent with the PTO’s shift in policy concerning computer-related business methods, the PTO has established a new category for patent applications, Class 705, which “encompasses machines and their corresponding methods for performing data processing or calculation operations . . . utilized in the . . . practice, administration, or management of an enterprise.” *Id.* Part III.A, at 5. In layman’s

business technologies.⁷⁰ More than 2,600 patent applications were filed in Class 705, the classification for computer-implemented business models and their underlying technologies.⁷¹ Although there was strong growth in this area, the 2,600 patent applications accounted for only one percent of the total patent applications for 1999.⁷²

With the influx of patent applications for Class 705, the PTO has granted several patents for computer-based business technologies that some find to be rather questionable patent grants. Commentators have attacked these patents for their apparent lack of nonobviousness or novelty. For example, Patent No. 5,926,796 describes a computerized method for subscribing to magazines at a retail outlet. In one commentator's opinion, the patent lacks the required inventive, nonobvious step.⁷³ The recent influx of rather suspect patents in the wake of *State Street* has also led many commentators to debate the wisdom of patenting computer-based business methods.⁷⁴ Generally, the commentators question whether the underlying purpose of the patent system warrants granting patent protection to business models.⁷⁵ Other commentators question whether the PTO can evaluate new applications effectively with its current examination procedures.⁷⁶

In response to many of the concerns and criticisms, the PTO has recently taken steps to improve its examination procedures in an attempt to stop invalid patent applications from receiving unjust patent protection.⁷⁷ Generally, the PTO has acknowledged that business method software patent applications have posed problems for its examiners and has implemented plans for better training and new search techniques.⁷⁸ Although the PTO has responded to the practical concerns about

terms, the class encompasses computer-implemented business models and their underlying technologies.

70. See *id.* Part III.D, at 7.

71. See *id.*

72. See *id.*

73. See Raskind, *supra* note 5, at 65–66.

74. See, e.g., Dreyfuss, *supra* note 5, at 265; Keeley-Domokos, *supra* note 5, at 165; Raskind, *supra* note 5, at 64; Thomas, *supra* note 5, at 1141.

75. See discussion *infra* Part III.B (further discussing the normative values of business method patents).

76. See, e.g., Dreyfuss, *supra* note 5, at 83; Andy Johnson-Laird, *Looking Forward, Legislating Backward?*, 4 J. SMALL & EMERGING BUS. L. 95, 120 (2000).

77. See generally *White Paper*, *supra* note 69, Part IV.D, at 11 (providing search and library support for patent examiners).

78. See generally *id.* (specifically recognizing that prior art searches are difficult in this new class of patent applications and thus increasing its professional research staff at its scientific and technical information center in an attempt to facilitate prior art searches).

examination procedures, the PTO has yet to address most of the normative concerns about patenting business methods.

It is unclear what the future will hold for computer-based business methods in America. One may speculate that the improved PTO standards will result in fewer questionable patent grants. Furthermore, the types of computer-implemented business models that the PTO reviews may become more selective. Because “[t]he *State Street* decision seems to indicate that to be patentable, business methods must achieve concrete and material results in addition to being useful,”⁷⁹ any general operating plan would have to be shown to produce some tangible economic benefit, such as increased productivity or decreased operating costs. This analysis would probably require “complex forecasting techniques and rely on economic assumptions and projections.”⁸⁰ Thus, companies may be hesitant to undertake such a speculative endeavor, preferring instead to patent systems that produce more tangible results.⁸¹ Therefore, it is likely that future patent applications will begin to claim very specific functions, such as accounting or order tracking rather than general operating systems.

2. International Effects and Reaction

The effects of the *State Street* decision can be seen outside the boundaries of the United States as well. The European Patent Office (“EPO”) has refused to omit the business method exclusion or the computer program exclusion from its regulations, even in the face of an outcry for legislative change.⁸² The Japanese Patent Office also has reacted to the new climate by releasing the final version of the revised “Examination Guidelines for Computer-Software-Related Inventions,” which clarify the standards for examining computer-based business methods.⁸³

79. Keeley-Domokos, *supra* note 5, at 168.

80. *Id.*

81. *See id.*

82. The EPO also clarified its stance on computer-implemented business methods: Computer programs that provide technical solutions for technical problems in the operation of a business may be patented, but programs that are of a nontechnical nature may not. *See* Press Release, European Patent Office, Statement by Dr. Roland Grossenbacher, Chairman of the Administrative Council of the European Patent Organisation (Nov. 29, 2000) [hereinafter Statement by Dr. Roland Grossenbacher], at http://www.european-patent-office.org/news/pressrel/2000_11_29_e.html.

83. *See* Press Release, Japan Patent Office, Revision of the Examination Guidelines for Computer Software-related Inventions (Jan. 2001), at <http://www.jpo-miti.go.jp/saikine/tt1301-008.htm>. The revisions were made after much public commentary that the JPO had invited through the Internet. *See id.* The revised guidelines allow examiners to consider computer programs that specify multiple functions to be performed by a computer to be a patentable invention. *See id.* The new guidelines provide further instructions to the examiners for determining the inventive step when examining business-related computer programs. *See id.*

The international effects of the *State Street* decision have been more than just legislative retooling and scholarly debates. Perhaps most importantly, the new patent climate in the United States may have had an impact on American companies' business strategies in foreign markets. A recent European study indicates that American companies are filing "significantly and proportionately more applications" for business method-related patents with the EPO as opposed to their European counterparts.⁸⁴ Furthermore, anecdotal evidence suggests that some European businesses are aware of the *State Street* decision and its ramifications but are not inclined to file for protection of their own business methods in the United States.⁸⁵ Thus, the *State Street* decision may have inspired American companies to seek protection abroad in the same manner they sought protection at home in order to gain a significant foothold in the global market. Such a strategy has caused some European commentators to urge European companies to adopt a strategy to deal with what they perceive as "the American rush to achieve the 'First Mover Monopoly.'"⁸⁶

All told, the industrialized nations have felt the ripple effects of the *State Street* decision. As the United States moves into the future with a more accommodating climate for business method patents, the international community may have to respond to these new developments. In the short term, it seems that the international community will not grant much patent protection to computer-based business methods. What remains to be seen is exactly how the international community will or should react in the long term.

84. MICHAL LIKHOVSKI, MICHAEL SPENCE & MICHAEL MOLINEAUX, OLSWANG AND OXFORD INTELLECTUAL PROPERTY RESEARCH CENTRE, *THE FIRST MOVER MONOPOLY: A STUDY ON PATENTING BUSINESS METHODS IN EUROPE* (2000), available at <http://www.oiprc.ox.ac.uk/EJWPO500.pdf>.

85. *Id.*

86. *Id.* A British researcher has defined a "first mover monopoly" as a virtual monopoly over a certain product granted through the patent systems to the first inventor to apply for patent protection in a particular country. *Id.* One European commentator has urged European nationals and policymakers to be wary of the influx of patent applications filed by American companies:

It is important that the public, as well as affected industries, monitor developments and enhance their awareness of the issues involved so as to ensure that any debate over the patentability of business methods in Europe is an informed one. Given the approach of United States nationals, Europeans should consider their options carefully, keeping in mind the effect these patents might have on consumer welfare and the freedom of companies to operate in the market.

Id.

III. BUSINESS METHOD PATENTS AND INTERNATIONAL INTELLECTUAL PROPERTY LAWS

A. THE INTERNATIONAL INTELLECTUAL PROPERTY TREATY REGIME

As a general principle, each community in this world lives by laws set and administered by itself. As transportation and media improve in these communities, however, transactions begin to increase between these distinct communities, and “[a]s a result, conflicts tend to arise between the respective laws of these communities.”⁸⁷ In the field of international intellectual property, treaty regimes govern the conflicts of laws, and domestic courts tend to interpret key legal terms within their own domestic laws so as to be consistent with the treaties in that particular field.⁸⁸ Therefore, any analysis of international intellectual property must be viewed in the context of the major governing treaties.

The international intellectual property field consists of three core multilateral treaties, each of which the United States is a member.⁸⁹ The first two treaties are the Paris⁹⁰ and Berne Conventions,⁹¹ which are often cited as the “Great Conventions.”⁹² These two treaties established a worldwide constitutional framework for international intellectual property laws and principles.⁹³ “Taken together, the Paris and Berne Conventions purport to subdivide the international intellectual property system into two hermetically sealed compartments separated by a common line of demarcation.”⁹⁴ The Berne Convention, completed in 1886 with the most recent revision in 1979, protects the rights of authors in their literary and artistic works through systems of copyrights and neighboring rights.⁹⁵ The Paris Convention, which was completed in 1873 and most recently revised in 1967, protects industrial property through regimes such as patents,

87. Paul Edward Geller, *International Intellectual Property, Conflicts of Laws and Internet Remedies*, 22 EUR. INTELL. PROP. REV. 125, 125 (2000).

88. *See id.* at 128.

89. Several other smaller intellectual property treaties do exist; however, they tend to cover more specific areas of intellectual property and have fewer signatory nations. *See, e.g.*, Council Directive 96/9/EC, 1996 O.J. (L 77) 20.

90. Paris Convention for the Protection of Industrial Property, Mar. 20, 1883, as last revised at Stockholm, July 14, 1967 (amended 1979), 21 U.S.T. 1583, 828 U.N.T.S. 305 [hereinafter Paris Convention].

91. Berne Convention for the Protection of Literary and Artistic Works, Sept. 9, 1886, as last revised at Paris, July 24, 1971 (amended 1979), 828 U.N.T.S. 221 [hereinafter Berne Convention].

92. Reichman, *supra* note 62, at 478.

93. *See id.*

94. *Id.* at 480.

95. *See* Berne Convention, *supra* note 91, art. I, 828 U.N.T.S. at 225.

trademarks, and utility model rights.⁹⁶ Currently, the Paris Convention has 163 signatory nations.⁹⁷

The third treaty is the Agreement on Trade-Related Aspects of Intellectual Property Rights,⁹⁸ commonly known as the “TRIPS” Agreement, of the World Trade Organization (“WTO”). Ratified in 1995 as nations signed the larger WTO Agreement, TRIPS currently has 144 signatory nations.⁹⁹ TRIPS has incorporated the core concepts of the two Great Conventions into its own articles, as well as adding new requirements and protections.¹⁰⁰

The international intellectual property system as embodied by the three major conventions basically desires to reduce distortions and impediments to international trade, while “taking into account the need to promote effective and adequate protection of intellectual property rights.”¹⁰¹ The international system also recognizes the need “to ensure that measures and procedures to enforce intellectual property rights do not themselves become barriers to legitimate trade.”¹⁰² Thus, the international system strives to reach some harmony between the rights of each country to set and administer its own laws and the desire for some sort of uniformity and predictability with regard to each nation’s protection of intellectual property.

The international treaty regime attempts to fulfill its goals by way of three basic principles. First, the treaties impose the principle of national treatment.¹⁰³ National treatment requires that signatory nations provide claimants from foreign treaty nations the same intellectual property rights

96. Paris Convention, *supra* note 90, art. I, 828 U.N.T.S. at 305.

97. See Paris Convention for the Protection of Industrial Property, Status on February 13, 2002, at <http://www.wipo.int/treaties/documents/english/word/d-paris.doc> (unpublished list of signatory nations). The United States was not an original signatory but joined the convention a few years later in 1887. See *id.*

98. Agreement on Trade-Related Aspects of Intellectual Property Rights, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, LEGAL INSTRUMENTS—RESULTS OF THE URUGUAY ROUND vol. 31, 33 I.L.M. 81 (1994) [hereinafter TRIPS Agreement].

99. See World Trade Organization, *Trading into the Future: Introduction to the WTO*, at http://www.wto.org/wto/english/thewto_e/whatis_e/tif_e/org0_e.htm (last visited Apr. 9, 2002).

100. See TRIPS Agreement arts. II, IX, X.

101. *Id.* pmb1.

102. *Id.*

103. See *id.* art. III; Berne Convention, *supra* note 91, art. V, 828 U.N.T.S. at 231, 233; Paris Convention, *supra* note 90, art. II, 21 U.S.T. at 1631, 828 U.N.T.S. at 313. All the treaties have certain requirements that an author or inventor must meet in order to gain the right to national treatment, which the TRIPS Agreement has adopted in whole. See TRIPS Agreement art. III (receipt of national treatment subject to exceptions provided in Paris and Berne Conventions).

that nationals receive, subject to several eligibility criteria.¹⁰⁴ To supplement the national treatment principle, the treaty regime also provides for a series of minimum rights.¹⁰⁵ Minimum rights set the minimum level of protection and rights that foreign claimants must receive in any treaty nation. Thus, a foreign treaty claimant may assert more extensive rights than the national rights of the protecting country if the treaties provide for greater minimum rights. The second principle imposed by the treaties is independence of rights, which provides that a foreign claimant can claim his or her minimum rights or rights under national treatment in a protecting country independently of his or her rights in other treaty states.¹⁰⁶ Finally, as a general principle, the treaty system attempts to synchronize some of the formal aspects of each country's intellectual property systems. For example, the TRIPS agreement has harmonized the patent terms in signatory nations by requiring the United States to extend its patent term to twenty years from the date of filing.¹⁰⁷

The treaty regime depends on the signatory states to implement the treaties' rules in order to fulfill the treaties' purposes.¹⁰⁸ Generally, the national approaches to implementing treaties can be separated into two categories. The first and most common approach is called the Monistic approach. In Monist countries, the treaties are incorporated into the municipal law as soon as they are signed by the country or upon some other legislative action by that state.¹⁰⁹ Thus, under the Monistic approach, a foreign claimant may invoke the terms of the treaties directly in the national courts as a source of protection.¹¹⁰ The second approach is commonly called the Dualist approach. Countries following the Dualist approach require that the domestic laws adopt new provisions to conform

104. See Geller, *supra* note 87, at 125. Thus, an author who is a U.S. national and who publishes a book in the United States has the right to sue in England under English copyright law to enjoin the infringement of his copyright in England. The criteria of eligibility is spelled out in the respective treaties. Although this criteria provides for an interesting discussion of international intellectual property, this subject is too lengthy and complicated for the purposes of this Note.

105. See *id.*

106. See *id.*

107. See MERGES ET AL., *supra* note 12, at 321.

108. See SAM RICKETSON, *THE BERNE CONVENTION FOR THE PROTECTION OF LITERARY AND ARTISTIC WORKS: 1886-1986*, at 130 (1986).

109. See *id.* at 131.

110. See *id.* Civil law countries most commonly follow the Monistic approach. See *id.* The United States may be classified as a Monistic country because the Constitution specifically requires that "all Treaties made, or which shall be made, under the Authority of the United States, shall be the supreme Law of the Land." U.S. CONST. art. VI. Congress, however, often takes it upon itself to incorporate the treaty provisions into the domestic law, thus precluding foreign claimants from invoking the treaty provisions directly as a source of protection in the United States.

to the treaty requirements. Therefore, foreign claimants must assert the national implementation of the treaty provisions rather than rely on the treaty provisions directly.¹¹¹

Because each nation's domestic courts and legislatures often have to interpret treaty provisions in order to implement them, standards of protection frequently vary from country to country. In fact, disputes arising under TRIPS often result from varying standards of protection among individual nations.¹¹² When disputes arise, the Dispute Settlement Understanding under the General Agreement on Tariffs and Trade ("GATT") applies.¹¹³ The basic system allows a treaty member to bring another treaty member before a third party panel of experts who are members of GATT.¹¹⁴ The panel renders decisions concerning the protection of one country; however, such decisions are not binding.¹¹⁵ The panel may only recommend that the infringing nation conform to the terms of the agreement, and it often suggests effective means of implementing its recommendations.¹¹⁶ If the infringing nation fails to conform to the decision, however, the complaining party may petition the WTO for permission to impose trade sanctions on the infringing nation.

B. CAN BUSINESS METHODS FIND PROTECTION ABROAD?

In order to obtain patent protection for an invention abroad, an inventor must file for a patent in the country where the inventor wishes to have protection. The Paris Convention provides that member countries must afford full access to their patent filing system to any national of a nonmember country who is domiciled, or who has a real and effective industrial establishment, in a member country.¹¹⁷ Thus, several questions arise as to how much protection American companies or inventors can receive for their computer-implemented business methods, and what source of law will provide for that protection.

111. See RICKETSON, *supra* note 108, at 131–32. Most common law nations, as well as the Scandinavian countries, follow the Dualist approach. *See id.* at 132.

112. See Jennifer A. Mills, Note, *Alternative Dispute Resolution in International Intellectual Property Disputes*, 11 OHIO ST. J. ON DISP. RESOL. 227, 232 (1996).

113. See TRIPS Agreement art. LXIV.

114. See Mills, *supra* note 112, at 234. The panels are comprised of international jurists and experts and are appointed by the General council acting under the provisions of GATT. *See id.*

115. *See id.*

116. *See id.*

117. See Paris Convention, *supra* note 90, art. III, 21 U.S.T. at 1631, 828 U.N.T.S. at 313. *See also* TRIPS Agreement art. XXVII (patents available for inventions that are new, involve an inventive step, and are capable of industrial application).

1. Protection Under Foreign National Law

Under the theory of national treatment, an American inventor who attempts to patent a computer-based business method in Europe under each specific country's domestic laws does not receive nearly as much protection as the inventor would have received in the United States. First, patent protection for business method processes does not exist in Europe.¹¹⁸ Second, the levels of protection for the software that implements the business methods differ so greatly that, in some cases, it is difficult to ascertain the scope of protection that a computer program may receive.

American inventors encounter several difficulties in finding patent protection for the overall business methods embodied in their computer programs. First of all, business methods as such are not patentable under the laws of most European nations.¹¹⁹ Several countries' patent laws, such as Germany's, expressly prohibit the patenting of business methods and computer programs.¹²⁰ Furthermore, the EPO has recently clarified its position that business methods are not of a technical nature, and therefore cannot receive patent protection as a process under the EPO system.

Another obstacle that inventors may encounter may be the initial confusion as to whether their claimed process actually constitutes a business method. Both the statutes and major treatises have eschewed defining business methods,¹²¹ leaving the term a bit "fuzzy."¹²² The EPO has offered one possible definition by stating that a business method is any subject matter that is more concerned with financial, interpersonal, and societal relationships than with engineering.¹²³ Thus, some European commentators have created a list of business methods, which include methods of gauging consumer habits, methods of marketing, methods of charging for goods or services, methods of accounting, and methods of inducing customers to buy.¹²⁴ Although the EPO's stance helps to clarify the term "business method," there still remains substantial wiggle room, so that some processes may find protection, while others will not. For

118. See LIKHOVSKI ET AL., *supra* note 84.

119. See *id.*

120. See German Patent Law, Part I, § 1 (1980), at <http://clea.wipo.int/lpbin/lpext.dll/clea/LipEN/19173/19629> (Dec. 16, 1980).

121. See LIKHOVSKI ET AL., *supra* note 84.

122. *In re Schrader*, 22 F.3d 290, 298 (Fed. Cir. 1994) (Newman, J., dissenting) (arguing that the business method concept was fuzzy and an "unwarranted encumbrance to the definition of statutory subject matter"). See also LIKHOVSKI ET AL., *supra* note 84 (asserting that the business method concept is "notoriously difficult to define").

123. See LIKHOVSKI ET AL., *supra* note 84.

124. See *id.*

inventors deciding whether to pursue patent protection abroad for their computerized processes, the state of the law may still represent a legal crap shoot.

Another obstacle facing American inventors in the European patent system is the barrier to patenting software components. Unlike the American patent system, which has all but done away with the physical step requirement in the mathematical algorithm exception, the leading European systems still require that mathematical algorithms imbedded in software provide a *technical* solution to a *technical* problem in implementing a process.¹²⁵

In fact, the European Patent Office has drawn a distinction between computer software per se and its application towards the resolution of technical problems, excluding from patentability only the former class of inventions. Thus, such inventions as manufacturing control software, signal processing and [computer aided manufacturing] systems have been held patentable. The European Patent Office has also granted claims relating to computer functionality, including programs such as memory management, data organization and operating systems. Computer-related inventions relating to such matters as processing text or learning to play a keyboard instrument, however, have been rejected as lacking technical effect.¹²⁶

This stance follows the European concept of invention, “which draws a clear distinction between technical solutions and non-technical methods.”¹²⁷

The different standards for computer programs become evident upon a comparison of American and European case law. For instance, the United Kingdom Patent Court’s decision in *Merrill Lynch Inc.’s Application*¹²⁸ provides a nearly perfect comparison with the American *State Street* decision.

In *Merrill Lynch Inc.’s Application*, the application described an automatic securities trading system that allowed customers to buy and sell stocks. “The claims were set forth in function terms, reciting a data processing system for enabling a securities trading market.”¹²⁹ The British court came to a decidedly different result than the *State Street* court, ruling that a computer program that causes a computer to calculate numbers to

125. See Statement by Dr. Roland Grossenbacher, *supra* note 82.

126. Thomas, *supra* note 5, at 1179.

127. Statement by Dr. Roland Grossenbacher, *supra* note 82.

128. See *Merrill Lynch Inc.’s Application*, [1988] R.P.C. 1, *aff’d*, [1989] R.P.C. 561.

129. *Id.*

provide pricing information did not involve a technical step and was therefore unpatentable.¹³⁰

Overall, America clearly provides more expansive patent protection, in terms of the subject matter that may be patented, than do foreign jurisdictions, such as Europe.

2. Analysis of Treaty Obligations with Respect to Business Methods

The argument for protection, however, does not end with the analysis of foreign national law. A complaining member nation, such as the United States, may argue that treaty obligations require that other nations protect computerized business methods. An analysis of the TRIPS Agreement and the minimum rights it provides does not conclusively demonstrate whether, or to what extent, computer-implemented business methods must be protected.

The relevant articles of the TRIPS Agreement provide that “patents shall be available for any inventions, whether products or processes, in all fields of technology, provided that they are new, involve an inventive step and are capable of industrial application.”¹³¹ TRIPS also provides that member states may exclude certain subject matter from patentability, such as medical procedures and plants or animals.¹³² TRIPS finally provides that member states “may exclude from patentability inventions, the prevention within their territory of the commercial exploitation of which is necessary to protect *ordre public* or morality . . . provided that such exclusion is not made merely because the exploitation is prohibited by their law.”¹³³ The treaty does not, however, explicitly accept or reject business methods as a patentable process.

Because it would take a leap of logic to conclude that business methods would endanger public morality, or *ordre public*, business methods are not likely to fall into the category of specifically excluded subject matter under TRIPS. Therefore, the analysis should focus on the TRIPS provisions outlining patentable subject matter and whether those provisions implicitly include or exclude business methods. Specifically,

130. *See id.*

131. TRIPS Agreement art. XXVII.

132. *See id.*

133. *Id.*

the analysis should turn on the interpretation of the term “capable of industrial application.”¹³⁴

The TRIPS Agreement does not specifically define “industrial application”; therefore, considerable ambiguity does exist in attempting to define this term in the context of the agreement. Although the specific lack of a business method exclusion seems to suggest that TRIPS includes protection for business models, several other factors tend to indicate otherwise. First, the industrial application standard suggests that the provisions only cover technical inventions or processes similar to the European system's industrial application standard. Therefore, because one may argue that business methods as such are not technical processes, TRIPS may not cover such processes. Second, several national patent systems have used the industrial application standard explicitly to exclude business methods. For instance, Article LVII of the European Patent Convention provides that “[a]n invention shall be considered as susceptible of industrial application if it can be made or used in any kind of industry, including agriculture.”¹³⁵ Of particular importance, the EPO's examination guidelines use the same industrial application standard as the European Patent Convention.¹³⁶ Because Article LII of the European Patent Convention specifically excluded business methods as patentable subject matter,¹³⁷ one may argue that the EPO's industrial application standard implicitly excludes business methods as patentable subject matter as well.¹³⁸ Although such examples from other nations' laws are not binding, they may provide persuasive sources of interpretative law for the resolution of the dispute. If the industrial application standard were to be interpreted in this way, any signatory nation that categorically excluded business methods from their patent systems would not be breaching its obligations under the TRIPS Agreement.

134. The provisions that require “new” and “inventive steps” in patents should not be contested, as these provisions probably correspond to the American requirements of novelty and nonobviousness. Thus, the argument should focus on the contention that failing to recognize business methods as patentable subject matter violates TRIPS because computer-based business methods are processes “capable of industrial application” within the meaning of TRIPS. In other words, one could argue that TRIPS requires member countries to recognize foreign business method patent applications based on an interpretation of the term “capable of industrial application.”

135. Convention on the Grant of European Patents, Oct. 5, 1973 (amended 1978), 13 I.L.M. 268, 286.

136. European Patent Office, *Guidelines for Examination in the European Patent Office* (Oct. 2001) art. 57, at 249–50, at http://www.european-patent-office.org/legal/gui_lines/pdf/gui_e_full.pdf.

137. Convention on the Grant of European Patents, *supra* note 135, at 286.

138. On the other hand, one may also argue that the absence of a provision similar to the European Patent Convention's ban on business method patents actually indicates that business methods could be patentable subject matter.

A further analysis of the industrial application standard raises the question of whether the TRIPS provisions require that countries protect the software that implements the business method. As an initial matter, TRIPS may not require that any country grant patents to computer programs or software-related inventions because TRIPS specifically grants copyright protection to computer programs.¹³⁹ Such alternative protection may indicate that the TRIPS agreement specifically excludes computer programs from patentability. Secondly, one should note that the TRIPS agreement might require less protection than the U.S. system because of the conceptual differences between the two relevant standards. The American “usefulness” standard, which was used by the *State Street* court to validate protection for business method software, is much broader in scope when compared to the industrial application standard as applied by Europe.¹⁴⁰ Finally, even if one concedes that TRIPS may cover some computer programs, the industrial application standard may limit protection to programs that implement processes covered by the TRIPS provisions. Therefore, TRIPS may not require countries to grant patents to data processing systems consisting of computer hardware if that system is only capable of a business application and not of a technical or industrial application. Such an interpretation would mean that any signatory nation could exclude computer programs or similar elements from the patent system if the program is only capable of a business application.

Although there has been no clear determination as to the obligations of member countries under TRIPS or the Paris Convention, the evidence indicates that business methods will not receive patent protection abroad. Furthermore, it appears that no clear international standard exists as to which software elements of business methods will receive protection independently of the overall process. Therefore, the future may hold more confusion in the international community, unless standards and minimum rights with respect to computer-based business methods are resolved.

C. INTERNATIONAL PROVISIONS SHOULD BE ADOPTED TO RESOLVE CONFLICTS CONCERNING COMPUTER-BASED BUSINESS METHODS

The international system does not attempt to rectify all inconsistencies within each country’s domestic laws; rather, it desires only to “reduce distortions and impediments to international trade.”¹⁴¹ In fact, the TRIPS

139. See TRIPS Agreement art. X.

140. See discussion *supra* Part III.B.

141. TRIPS Agreement pmb1.

Agreement specifically allows for member states to exclude broad ranges of patentable subject matter from their domestic patent laws, including medical procedures, plant life, and animal life.¹⁴² With the obvious incongruities in nations' stances regarding the patentability of computer-implemented business methods now at the forefront, the question arises as to what effects such incongruities may foster. The possible effects as outlined in these sections suggest that the incongruities should be rectified in the interests of international trade and international intellectual property.

1. Computer-Based Business Methods As Proper Subjects of International Intellectual Property Regulation

If the underlying goal of the multilateral system, as most recently embodied in the TRIPS Agreement, is to reduce the barriers to international trade, then inconsistencies between nations that adversely affect trade are proper subject matter for international action. This reasoning is implicit in the TRIPS Agreement's allowance for exclusions from patentable subject matter. Unfortunately, the empirical data is not available to determine the impact of the inconsistencies between the laws of different nations. Two key aspects of computer-implemented business methods, however, suggest that these new forms of intellectual property will play an important role in international trade in the future.

First, business method software incorporates several categorical forms of intellectual property into one package that is capable of being sold as an individual intellectual property product. Thus, the international system should have an interest in regulating such software as potential products of international intellectual property trade. Second, one must consider that computer-implemented business methods are, in a sense, the very definition of trade because the methods of doing business establish the conduits by which trade is made possible. Also, the fact that computer-implemented business methods can be adapted to the Internet increases the likelihood that such properties will become avenues for trade across borders. The projected numbers in the United States alone confirm the notion that computer-implemented business methods will play a large role in future trade. Analysts project that Internet-based business transactions in the United States alone will grow from the \$13 billion recorded in 1998 to \$108 billion by the year 2003.¹⁴³ Thus, the international system should strive to standardize the protection given to such business methods, as they

142. See *id.* art. XXVII. Note that TRIPS does require some protection for plant varieties through a patent system or another sui generis right. *Id.*

143. See Wiese, *supra* note 4, at 19.

stand to become an increasingly important component of the flow of international trade, regardless of their worth as an intellectual property product.

2. Negative Effects of the Failure to Regulate Inconsistencies

After noting that computer-implemented business methods should play a large role in international trade, the focus should turn to the specific effects that inconsistencies may engender in the international system. One commentator has asserted that in this age of relatively free data flow between distinct territories, powerful media only accentuates the ambiguity of territoriality with respect to intellectual property.¹⁴⁴ Therefore, as technology increases the ability and ease with which data flows across borders, a global network of information exchange begins to emerge and the effects of inconsistent laws among the nations in this network may be even more dramatized in the future. For instance, one country may apply its own law to certain intellectual property products throughout the global network. "If the law of one country provides too little protection, or another too much protection, applying one or the other law can result in pirate havens or choke points for data flow in the network."¹⁴⁵ Such a scenario has not occurred with respect to computer-implemented business method patents, but the future may hold such a conflict.

Consider, for example, the possible outcomes of a hypothetical lawsuit where a business method patent holder in the United States sues a foreign competitor for infringement. For the sake of argument, assume that the plaintiff company, "Congo.com," holds a patent in the United States for its order taking and product routing system.¹⁴⁶ The system is based on the Internet and allows customers who wish to buy widgets to click on the widget they want in order to create an order with the appropriate billing and shipping information. The system also sends an e-mail confirmation of the order to the customer. The company holds a U.S. patent for both the process and the software that enables the system. Congo.com has applied for a patent in Europe, but both the process and the product claims have

144. See Geller, *supra* note 87, at 126.

145. *Id.*

146. One may notice the not too subtle similarities to the Amazon.com patent. This system is very similar to the system challenged in *Amazon.com v. Barnes and Noble.com.*, 73 F.Supp.2d 1228 (W.D. Wash. 1999), *vacated*, 239 F.3d 1343 (Fed. Cir. 2001). For the purposes of this discussion, many of the details and specifications shall be omitted. Also, please assume that the patent at issue is a valid patent and that the plaintiff would be able to gain jurisdiction over the defendant in a U.S. court.

been rejected under EPO standards.¹⁴⁷ Now assume that a competitor of Congo.com based in Europe has established its own website that sells widgets and uses a similar order and routing system. Both Congo.com and its competitor primarily target their domestic markets, but both record substantial sales abroad through their websites. Assuming that Congo.com files a lawsuit in the United States against its competitor and claims only patent infringement under U.S. laws,¹⁴⁸ what are the possible outcomes?¹⁴⁹

As a general principle, American courts are reluctant to apply patent laws in an extraterritorial manner. The Supreme Court has stated: “Our patent system makes no claim to extraterritorial effect; ‘these acts of Congress do not, and were not intended to, operate beyond the limits of the United States.’”¹⁵⁰ The law pertaining to infringement of a patent is codified in 35 U.S.C. § 271. The elements for direct infringement of a product patent are outlined in § 271(a): “[W]hoever without authority makes, uses, offers to sell, or sells any patented invention, within the United States or imports into the United States any patented invention during the term of the patent therefor, infringes the patent.”¹⁵¹ As such, the use of a patented product overseas is not a violation of U.S. patent laws. Therefore, our hypothetical competitor’s use of the patented software would not infringe Congo.com’s patent if the software and servers operated entirely in a foreign country. Congo.com’s only claim would be that the competitor infringed the process claims.

According to the Patent Act, however, the use of a patented process abroad is not an infringement of the patent laws either.¹⁵² Therefore, Congo.com may not be able to argue that the competitor has used the process in the United States, if a computer outside the United States

147. See *supra* Part III.B (discussing the EPO standards for computer-implemented business methods).

148. Note that Congo.com could file suit in the competitor’s home country with a variety of claims. Congo.com would not be able to claim patent infringement under the foreign country’s domestic laws, as it has no patent rights in that country. Congo.com may also claim unfair competition claims; however, for the purposes of this Note, it is safer to assume that Congo.com’s counsel is not very creative and only seeks patent infringement in the United States.

149. For a detailed analysis of foreign infringement of business method patents, see Timothy F. Myers, Note, *Foreign Infringement of Business Method Patents*, 7 WILLAMETTE J. INT’L L. & DISP. RESOL. 101 (2000).

150. *Deepsouth Packing Co. v. Laitram Corp.*, 406 U.S. 518, 531 (1972) (quoting *Brown v. Duchesne*, 60 U.S. 183, 195 (1856)). The Court in *Deepsouth Packing* held that producing nonpatentable components of a combination patent and shipping them abroad with instructions on how to modify the components to create the patented machine was not an infringing act performed within the United States. *Id.* at 525–29.

151. 35 U.S.C. § 271(a) (1994).

152. Myers, *supra* note 149, at 109.

performed all the relevant data functions. Several years ago, Congo.com may have had no recourse, but in 1988, Congress passed the Process Patent Amendments Act, which attempts to regulate the use or sale within the United States of products made by patented processes abroad.¹⁵³ The pertinent section of this Act, codified in part in 35 U.S.C. § 217(g) reads:

Whoever without authority imports into the United States or offers to sell, sells, or uses within the United States a product which is made by a process patented in the United States shall be liable as an infringer, if the importation, offer to sell, sale, or use of the product occurs during the term of such process patent. In an action for infringement of a process patent, no remedy may be granted for infringement on account of the noncommercial use or retail sale of a product unless there is no adequate remedy under this title for infringement on account of the importation or other use, offer to sell, or sale of that product. A product which is made by a patented process will, for the purposes of this title, not be considered to be so made after—

- (1) it is materially changed by subsequent processes; or
- (2) it becomes a trivial and nonessential component of another product.¹⁵⁴

Congo.com could attempt to avail themselves of this provision in order to enjoin a competitor; however, whether this provision can apply to business method patents is not entirely clear.¹⁵⁵

Several ambiguities in the law raise questions as to whether Congo.com can hold its competitor liable under this provision. First, the court must determine what is the actual “product” of the patented process. In analyzing the general contours of the process itself, several plausible interpretations exist as to what constitutes the product in this case. The first interpretation is that the completed order constitutes the product of the process.¹⁵⁶ This interpretation may be the most logical, since the process operates by gathering information and producing a useful tangible result in the form of a widget order. The next interpretation is that the order confirmation sent to the customer constitutes the product.¹⁵⁷ Thus, Congo.com could argue that its competitor is importing the product into the

153. The passage of the Act was in response to a loophole in the earlier version of the Patent Act, which had allowed companies to assemble nonpatented products abroad by means of a patented process and import the products into the United States without any fear of infringement. *See id.* The act was passed after four years of congressional hearings on the matter. *See id.* at 109–10.

154. 35 U.S.C. § 271(g) (1994).

155. *See Myers, supra* note 149, at 110.

156. *See id.* at 114.

157. *See id.*

United States when it sends the confirmation through e-mail or through a confirmation web page displayed on the purchaser's computer. The final interpretation is that the product of the process is actually the purchased item, the widgets in this case.¹⁵⁸ Such an interpretation would be more beneficial to Congo.com because it may be easier to prove that the competitor imported, sold, or offered to sell the product of the process in the United States.

The second ambiguity a court must grapple with is pinpointing the infringing act in relation to the definition of the product of the process. For example, the court may have to determine whether sending an e-mail confirmation over the Internet to the American customer constitutes importing the product. One commentator has argued that such an act would not constitute importation of a product for the purposes of the statute because Internet network providers actually transport the order confirmation into the United States, not the competitor.¹⁵⁹ If the court determined that the end product was the widget, the competitor still could avoid liability if it structured its shipping process so that it could not be considered, according to the law, an importer of the end product. Finally, a court may have to determine whether the fact that the competitor's website is accessible inside the United States constitutes an offer to sell within the meaning of the statute. Obviously, any attempt to localize the infringing activity is complicated greatly by the presence of the Internet because the moment any company goes online, it becomes present in every country.

If Congo.com were to prevail in a court, it is unclear what form the remedy would take. Although U.S. courts are hesitant to apply U.S. patent laws extraterritorially, the Federal Circuit has upheld an injunction against a German company, which prohibited certain preparatory acts in Germany that would lead to infringement upon entering the United States.¹⁶⁰ In that case, the court held that the injunction was reasonable and was not a prohibited extraterritorial application of U.S. law.¹⁶¹ Thus, injunctive relief may be available to Congo.com.

158. *See id.*

159. *See id.* at 118. The author bases this argument on *Pfizer Inc. v. Aceto Corp.*, 853 F. Supp. 104, 105–06 (S.D.N.Y. 1994), which held that a foreign business that sold the product of a patented process to another foreign company, that in turn imported the product to the United States, was not a direct importer of products and therefore not subject to the Patent Act provisions.

160. *See Spindelfabrik Suessen-Schurr v. Schubert & Salzer Maschinenfabrik, AG*, 903 F.2d 1568, 1578 (Fed. Cir. 1990). The injunction prohibited "any activity which in any way relates to the manufacture, sale, use, servicing, exhibition, demonstration, promotion or commercialization of any [infringing machine], either in the United States or for use in the United States." *Id.* at 1574.

161. *Id.* at 1578.

It is not clear, however, what form the injunctive relief would take in this case. The courts may look to other international Internet injunctions based on other areas of intellectual property for guidance in crafting a suitable injunction. One such case is *Playboy Enterprises, Inc. v. Chuckleberry Publishing, Inc.*¹⁶²

In that case, the district court had to interpret an earlier injunction prohibiting the distribution within the United States of an Italian magazine whose name violated the plaintiff's U.S. trademark, but did not violate the plaintiff's trademark in Italy.¹⁶³ The court found that the defendant had distributed the infringing magazine in the United States through its website by allowing paying subscribers to view the contents of the magazine after receiving a password from the defendant via e-mail.¹⁶⁴ In considering possible sanctions, the court first noted the special circumstances presented by the World Wide Web:

[The defendant] cannot be prohibited from operating its Internet site merely because the site is accessible from within one country in which its product is banned. To hold otherwise "would be tantamount to a declaration that this Court, and every other court throughout the world, may assert jurisdiction over all information providers on the global World Wide Web."¹⁶⁵

The court also noted, however, that any special treatment for Internet sites should not extend so far as to allow crafty entrepreneurs to circumvent intellectual property laws easily through the creation of an Internet site abroad.¹⁶⁶ The court then ordered that the defendant refrain from accepting any new customers from the United States and revise its Internet site to indicate that all subscription requests from potential U.S. customers will be denied.¹⁶⁷ Thus, a court could craft an injunction that would require Congo.com's competitor to refrain from accepting orders from residents of the United States.

The uncertain results of this hypothetical case demonstrates the potential problems foreign and domestic companies may face in the future as they wrestle with the inconsistencies in the international system. The

162. 939 F. Supp. 1032 (S.D.N.Y. 1996).

163. *See id.* at 1034. The Italian courts had ruled that the plaintiff's "Playboy" trademark was a "weak mark and not entitled to protection" in Italy. *Id.*

164. *See id.* at 1039.

165. *Id.* (citations omitted).

166. *See id.* at 1040.

167. *See id.* at 1040-41. The court also ordered that the defendant refund the unused portion of the subscription fee to U.S. customers and return to the plaintiffs all the gross profits earned from U.S. customers. *Id.* at 1041.

problems may stem from the fact that tangible and useful products of patentable processes may now come in the form of data rather than concrete, physical products. Furthermore, as such data may now also come from business methods, the data may more likely be transmitted over the World Wide Web. Therefore, as the power of the Internet increases the ease with which data flows between nations, the old rules concerning patented processes, which once policed the borders of America's patent laws, may prove too outmoded realistically to provide clear rules that domestic and foreign parties can interpret and around which they can plan.

The uncertain results also demonstrate how incongruent patent laws of this nature may pose problems in the global market place, especially on the Internet. International companies considering whether to utilize certain computer-implemented business methods on the Internet may be wary of potentially infringing a U.S. patent. Also, such companies may take preemptive steps to avoid possible infringement by redesigning their corporate structure, their distribution channels, or their marketing schemes. Such moves may prove to be inefficient and costly. Furthermore, if foreign companies do find clever safe-harbors in the U.S. patent laws, American patents will be devalued as the foreign companies cut in on the patent holder's limited, exclusive market on the Internet.

Therefore, members of the international system should recognize the problems inherent in this new area and that the current system does not provide any concrete answers. New provisions are needed to rectify the inconsistencies between nations' laws and specifically deal with this new form of protectable intellectual property. If the international system had uniform measures to protect computer-implemented business methods, companies would be able to find adequate protection in those foreign countries and would not be forced to rely on America's domestic laws to protect their innovations.

IV. WHAT FORM OF PROTECTION?

It is unclear how the international system should remedy the global inconsistencies with regard to computer-implemented business methods. Although the current international system does not specifically cover computer-implemented business methods,¹⁶⁸ the modern system's adherence to the traditional framework of the Great Conventions suggests that it would continue to follow the nineteenth-century paradigm.¹⁶⁹ Under

168. See discussion *supra* Part III.

169. See Reichman, *supra* note 62, at 477-78.

the traditional paradigm, business method software would probably gain protection through a patent or patent-like exclusive rights system as mandated by minimum rights. As the critical American response to business method patents indicates, a patent system for such inventions should not be the preferred method of protection. Rather, the protection should consider both the dual nature of business method software and the changing technologies. Thus, the nature of business method software suggests that a system of default liabilities would provide adequate protection for the business method software without the encumbrance of overprotection.

A. A NORMATIVE ANALYSIS OF PROVIDING PATENT PROTECTION TO
BUSINESS METHODS

The commonly accepted theory underlying patents is that the patent system encourages the initial outlay of money or the sunken cost in developing an invention even in the face of uncertain outcomes. The incentive is fueled by the grant of protection and the ability of the inventor to exclude others from capitalizing on the inventor's sunken cost and innovation.¹⁷⁰ Conveying a limited monopoly to the inventor, however, creates a negative effect known as dead weight loss. The incentive function of the patent system must therefore be balanced against the dead weight loss.¹⁷¹ In practice, the patent system's balancing function is not a perfect science. One leading economic scholar has stated, "[T]he patent system is a crude and imperfect instrument. Because of diverse real-world complications, the patent protection given an innovator may be too little, too much, or of the wrong kind."¹⁷²

Because it would be impractical to first quantify the potential sunken cost needed for any individual invention and then calculate the appropriate strength of protection the invention should receive, the criticisms must focus on the broad class of innovations as a whole, rather than on each particular innovation. Business method patents have received much of the criticism in the past years on this level. Many critics of business method patents argue that the patent system is not needed to induce companies or inventors to create such systems. One commentator has summed up the major economic analysis succinctly:

170. See Raskind, *supra* note 5, at 70–71.

171. See *id.* at 71.

172. F.M. SCHERER & DAVID ROSS, INDUSTRIAL MARKET STRUCTURE AND ECONOMIC PERFORMANCES 624 (3d ed. 1990).

[T]he economic analysis of patent protection does not support the extension of patent protection to methods of doing business. Both economic theory and empirical studies of patent-intensive industries cast doubt on the premise that patent protection of business methods is required either as an incentive for innovation or as an ingredient of the efficient diffusion of business methods in the economy.¹⁷³

This may be especially true for e-commerce companies, which are more likely to utilize such inventions. Anecdotal evidence indicates that the combination of being the first to invent and implement the invention and possessing a good trademark leads to a “significant head start advantage” in any particular industry.¹⁷⁴ Furthermore, a head start advantage may be even more significant in the on-line world than in the traditional market place because the barriers to entry are substantially lower for on-line firms.¹⁷⁵ Therefore, granting patent protection to business method software, regardless of the actual novelty or nonobviousness of the invention, would be akin to using a cannon to kill a mosquito.

Other critics of business method patents have commented on the possible detrimental effects of such patents on the Internet. Some believe that patenting such innovations may pose significant problems for the future efficiency of the global web-based business network. Patents in cyberspace may provide an incentive for entrepreneurs to become collectors of patent royalties rather than active participants in the market.¹⁷⁶ Thus, “the so-called superhighway of electronic commerce could be partially converted into a toll road.”¹⁷⁷

Providing patent protection for business methods may also prove to be problematic in the overall international system. As discussed earlier, the traditional international system separates intellectual property into two distinct camps of protection—patent-like rights for industrial property and copyright protection for artistic or creative works.¹⁷⁸ J.H. Reichman, in his articles, *Charting the Collapse of the Patent-Copyright Dichotomy: Premises for a Restructured International Intellectual Property System* and *Legal Hybrids Between the Patent and Copyright Paradigms*, has argued that recent grants of particular rights to certain new forms of intellectual

173. Raskind, *supra* note 5, at 64.

174. Jared Earl Grusd, *Internet Business Methods: What Role Does and Should Patent Law Play?*, 4 VA. J.L. & TECH. 9, ¶ 47 (1999), at <http://www.vjolt.net/vol4/v4i2a9-grusd.html>.

175. *See id.* ¶¶ 47–48.

176. *See* Raskind, *supra* note 5, at 66–67.

177. *Id.* at 67.

178. *See* Reichman, *supra* note 62, at 480.

property demonstrate that the current system merely attempts to squeeze any new property to be protected into one of the established rubrics of the old system.¹⁷⁹ Reichman concludes that certain protective regimes, such as utility model laws and laws protecting integrated circuits, have been lumped into the industrial property and the artistic spheres of the international system, respectively.¹⁸⁰ Reichman calls such regimes “Hybrid Legals,” as they exhibit characteristics of both industrial property regimes and artistic works regimes, yet do not fit squarely into one single category.¹⁸¹ Furthermore, he argues that continuing to create hybrid regimes in the international system, thereby overprotecting certain intellectual properties, may cause that system to collapse under its own protectionist weight.¹⁸²

Providing patent protection or patent-like protection to business method software would be another example of the international system creating a hybrid legal regime to protect an ambiguous intellectual property. Business method software does not lend itself to the traditional paradigm because its very make-up is essentially a combination of inseparable forms of intellectual property, each protected under different types of intellectual property doctrines. For instance, the end products at issue in cases like *State Street* primarily consist of business know-how imbedded into a computer program. Business know-how in the abstract can truly receive protection only through trade secret laws. The computer program that operates the computer represents the technical aspect of the product and generally receives protection through patent systems. Once the business know-how is imbedded in computer software, however, both aspects of the product work together to provide the desired result. In the abstract, both aspects of the invention are capable of being protected independently under different doctrines. Neither of the traditional intellectual property regimes, however, would have protected the entire innovation as a whole. Therefore, if the international system adopted a patent-like system for business method software, that system would merely represent another legal hybrid regime, which would again perpetuate the outmoded paradigms of the international intellectual property system.

179. See Reichman, *supra* note 62; J. H. Reichman, *Legal Hybrids Between the Patent and Copyright Paradigms*, 94 COLUM. L. REV. 2432 (1994).

180. See *id.* at 500, 502.

181. See *id.* at 507.

182. See *id.* at 520.

B. DEFAULT LIABILITY REGIMES AS PROTECTION
FOR BUSINESS METHODS

At the outset of this discussion, it should be noted that protecting business method software would be in line with the current inclusive trends in intellectual property regimes. The current state of affairs in the international system has been shifting its foundational underpinnings over the last twenty years. The recent development of hybrid legal regimes for properties, such as integrated circuit designs and plant variations has turned “the nineteenth-century outlook upside down by presupposing a universe of commercial intercourse in which legal protection becomes a necessary and constant component of economic life.”¹⁸³ Thus, protecting business structures implemented through computer programs may be a necessary step in the changing legal climate. Furthermore, the existing framework of intellectual property laws does not seem to provide adequate protection in light of the unique characteristics of business method software. Therefore, a new international system should grow from the old system that provides increased protection for computer-based business methods without resorting to the outmoded paradigms of the international system.

1. Current Intellectual Property Laws Do Not Provide Adequate Protection for Computer-Based Business Methods

Legal hybrids within the international system were the product of a failed system of ancillary rights embodied by traditional trade secret law. The traditional international system as applied to conventional technologies provided a substratum of liability rules that granted some, albeit limited, protection for the commercial use of an intellectual property when that property could not fit within one of the classic spheres.¹⁸⁴ As new technologies arose and pushed the boundaries of the traditional intellectual property laws, however, the intellectual property system’s set of default ancillary rights did not adjust accordingly. Thus, when the liability rules proved inadequate to protect new innovations, the threat of a market failure led to a proliferation of hybrid regimes in different countries, which in turn became harmonized in the international system under the guise of one of the two dominant paradigms.¹⁸⁵

The same sets of issues may likewise be at play with computer-implemented business methods. Absent patent protection, inventors of

183. Reichman, *supra* note 179, at 2504.

184. *See* Reichman, *supra* note 62, at 518.

185. *See id.* at 519.

business method software are likely to rely on trade secret laws or equivalent foreign laws protecting confidential information to protect their software and business methods. The modern trade secret laws, however, may not be sufficient to protect innovations in computer-implemented business methods.¹⁸⁶ Trade secret laws provide some protection and some incentive to invent based on the notion that “some measure of natural lead time will result from the duty of second comers to reverse-engineer unpatented, noncopyrightable innovation by proper means.”¹⁸⁷ Trade secret law, however, has broken down under modern conditions because the very information that is to be protected has become the primary medium of construction for innovative products.¹⁸⁸ Therefore, many unpatented, noncopyrightable products tend to receive no lead-time, and thus little protection, from traditional trade secret laws.

Computer-implemented business methods may also face similar problems with respect to underprotection from classic trade secret law because of the dual nature of the product itself. If the business know-how is left to be protected by traditional trade secret laws and the software components by copyright laws, a company may face underprotection for its business method software based on the company’s desired use of the software. For instance, take a business computer program “A” in which the main value is the innovative and novel method embedded in the software. The computer program implementing the business method is easily reverse-engineered and transferred to a competitor’s own computer program with little cost and in a manner that would not infringe any copyright in the software itself. Also, the “A” program would require \$1 million of sunken costs to develop the product, the majority of which would be spent on the business method. Furthermore, the most efficient business strategy would be to sell or market the “A” program on a large market, rather than to use the software in its own line of business. Because copyright laws will not provide much protection against a competitor, the owner of “A” would have to rely on trade secret law to protect the invention. Given that most trade secret laws around the world require a modicum of secrecy, the company cannot risk shattering its secrecy by marketing its software on a large scale. Furthermore, because the business method is easily reverse-engineered, the turnaround time for competitors to get a similar knock-off product on the market is significantly reduced, cutting into any lead-time

186. See Grusd, *supra* note 174, ¶ 49 (arguing that small firms would rather rely on trade secret law than expend money in an expensive patent prosecution procedure).

187. Reichman, *supra* note 62, at 518.

188. See *id.*

“A” may have had in the market place. Faced with the prospect of no legal protection once a product goes to market, inventors and investors may be wary of losing the sunken costs of developing the software.

Now consider the inventor of business method software “B.” The value of “B” lies not in the business method but rather in the programming. Although the business method can be deciphered easily, the actual programming of the software is difficult to reverse-engineer without significant cost and likelihood of copyright infringement. Also consider that the total sunken cost for this product is the same \$1 million. The owner of “B” is in a relatively much better position than “A” because it can rely on the stronger copyright laws to protect its investment and proceed with a large-scale marketing of the product without fear of losing the only protection it has.

Such applications of current laws significantly underprotect certain methods while providing inflated protection for other methods. Under the hypothetical situation, inventors choose to invent products, such as “B,” instead of products, such as “A.” As a result, the current laws provide inconsistent real world results within the broad field of business method software.

As Reichman has argued, such inconsistencies could threaten market failure, which may trigger political pressure in many nations to pass overprotective laws. Unfortunately, the recent acceptance of business methods in U.S. patent law as patentable subject matter does not provide a clear example of laws reacting to a potential market failure. As discussed earlier, the *State Street* court has decided the matter based on legal interpretations of statutes and doctrine, while avoiding any discussion of market failure or policy goals. There is, however, evidence that such market pressures do exist. Perhaps one of the many factors that contributed to the recent crumbling of the American computer technology market is the inability of such computer-based firms to find profitable business strategies in the face of inadequate protection for their business method software. Furthermore, the recent stampede to patent offices around the world by companies attempting to find patent-like protection for their software suggests that firms would prefer to have the ability to market their products under assurance of patent protection.¹⁸⁹ Therefore, market pressures may

189. See discussion *supra* Part II. Also note that such firms may be seeking competitive advantages in the world market place through patent protection rather than earnestly attempting to seek an efficient business practice.

produce more hybrid regimes designed to protect the interests of business method software.

2. A Suggested Default Liability Regime

Because business method software may be classified as a new legal hybrid, the proper protection for such software may be similar to the proposed remedies for other legal hybrids. As a means of protecting other legal hybrids in the international system, Reichman has proposed a new system of default liability rules that would supplement traditional trade secret laws as a means of providing to legal hybrid subject matter the appropriate amount of protection, while avoiding the overprotection of hybrid systems.¹⁹⁰ The default liability rules are meant to replace the cumbersome grants of exclusive patent rights to the hybrid properties. Therefore, such a system implicitly would require that such properties not be the subject of patents or patent-like rights.¹⁹¹ The rules would be available to firms in addition to traditional trade secret remedies as a method of protecting technologies that may be too easily reverse-engineered to be profitable without patent protection.¹⁹² This may be of particular use in the field of Internet business methods, as such methods may be easily reverse-engineered.

The regulatory framework he presents consists of six structural elements. They are “(1) treating industrial compilations as the proper object of protection; (2) providing artificial lead time; (3) developing a menu of users’ liabilities; (4) allowing registration with minimal disclosure; (5) supplying legal and technical ground rules to preserve and enhance competition; and (6) developing appropriate bases for collective action.”¹⁹³ Applying Reichman’s principles to the field of business method software would provide a viable and acceptable means of protection.

Under the principle of industrial compilation, the default liability regime would grant protection to any business method software, provided that the novel selection and arrangement of function features produce an innovative utilitarian result.¹⁹⁴ Furthermore, the protection would apply to slight innovations in the field that would not have met the strict patent requirement of nonobviousness. Second, the system, under the artificial lead time component, would provide the first inventor a short, specified

190. See Reichman, *supra* note 179, at 2529–57.

191. See *id.* at 2530.

192. See *id.* at 2552.

193. *Id.* at 2545.

194. See *id.* at 2546.

time in which direct copying of the invention would result in automatic liability for a predetermined amount, much like an automatic license.¹⁹⁵ The artificial lead-time would also be flexible, subject to that particular industry's regulatory board's decision as to the appropriate amount of time.¹⁹⁶ Third, the system's menu of user's liabilities would supplement the lead-time provision by providing for smaller contributions to the inventor from firms that borrow the business methods or underlying technologies to produce similar, but not directly copied, versions of the business method software during the lead-time period.¹⁹⁷ Fourth, any firm wishing to make use of the liability rules would have to register a simple statement outlining the basic know-how of the business method or the underlying program in order to "enable fair followers to avoid unintended replication of the same functional behavior by essentially the same industrial compilation."¹⁹⁸ Under the fifth principle, the system's industry regulatory board would set the appropriate rules governing the technical components of the registered system. Thus, the relevant computer technology industry, not the court system, would establish the standards for determining usefulness, disclosure, and the breadth of the claims.¹⁹⁹ Finally, the entire system would be governed through a body of representatives from the specific computer technology sector. That board would have the responsibility of collecting the royalties, settling disputes, and registering the software claims.

Overall, Reichman's regime seems to be a plausible solution for the international system. Because the general framework "aims to avoid market failure without introducing the market distortions characteristic of intellectual property rights,"²⁰⁰ the system may be well-suited for the market and policy concerns surrounding computer-implemented business methods. Specifically, the system incorporates beneficial elements of the patent system while adhering to more traditional trade secret policies. For instance, the system alleviates problems of reduced lead-time inherent in certain software products by granting artificial lead-time without the long, twenty-year de facto monopoly of the patent system. Also, because the system is regulated and administered by the relevant industry, the standards and rights can be more closely molded to the exact needs of members of the industry. Furthermore, because the system requires that an inventor

195. *See id.* at 2547.

196. *See id.*

197. *See id.* at 2548.

198. *Id.* at 2551–52.

199. *See id.* at 2553.

200. *Id.* at 2534.

provide a limited disclosure of the innovative software in order to benefit from the enhanced liability rights, the procompetitive elements of the older legal regime, which helped to spawn the boom in the American computer technology industry, remain relatively intact while still taking into account the need for greater protection.

The regime is appealing as an international remedy as well because it may find acceptance in the international community. First of all, it would appeal to foreign countries that already have refused to grant full patent protection to computer-implemented business methods. Second, several countries already have adopted similar systems based on liability principles, thereby making implementation by multilateral treaties more likely.²⁰¹ Finally, the set of default liability rights can be easily adapted to the Internet. Because the liability rules are administered by the relevant industry rather than the individual state governments, one can imagine that international Internet industry representatives could form a regulatory body to police the use of business method software on the Internet effectively. Thus, the default liability regime would not only provide preferable protection for business method software, it also would be more adaptable to the changing technologies and markets than the current international system.

V. CONCLUSION

The future of business method patents in the international system is unclear at this point. Furthermore, the status of the multilateral treaty system is also in question with regard to business method patents. Because the treaties are products of intense negotiations and complex foreign trade policies of many nations, the future may be even more clouded. One thing remains clear, however—computer-implemented business methods have announced their arrival on the international scene as an industrial property that is begging for protection. Hopefully, the legislators who help mold international intellectual property will take notice and move forward into the twenty-first century with a progressive intellectual property regime, instead of with one that continues to rely on the theoretical underpinnings of nineteenth-century international law. Brave new inventions in this age deserve brave new laws to protect them.

201. *See id.*