Patenting Pricing on the Nines?
An Overview of Patents on Financial Services
and Other Methods of Doing Business

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Prices ending with nines are ubiquitous in U.S. markets. One reason is that consumers are said to ignore these digits when making purchasing decisions. Another purported benefit is that cashiers are less able to defraud their employers, as they must make change rather than pocket money at the point of sale. The origin of this pricing concept is obscure, with various narratives claiming different inventors at different time. Yet the accounts agree that pricing on the nines quickly entered the public domain following its introduction.

There is little doubt today that had pricing on the nine been invented today, this sales strategy could be subject to private appropriation. As a business method capable of achieving a useful, practical and tangible result, pricing on the nines could be as patented as readily as, say, a pharmaceutical compound, machine or electronic circuit. This legal conclusion follows from the celebrated 1998 decision of the United States Court of Appeals for the Federal Circuit in *State Street Bank & Trust Co. v. Signature Financial Group, Inc.*[1] In *State Street Bank*, the plaintiff held a patent for a data processing system consisting of software for managing a stock mutual fund. The Federal Circuit held that this invention could be the subject of exclusive rights obtained via the patent system. In so doing, the Federal Circuit confirmed that patents could issue for innovative methods of doing business.

In the wake of *State Street Bank*, the United States Patent and Trademark Office ("PTO") has received numerous patent applications concerning business methods.[2] Disputes over the validity and scope of business method patents have quickly made their way to the courts. One noteworthy business method patent enforcement litigation involved an Amazon.com patent claiming single-click ordering from an Internet web site.[3] The result of the litigation was the award of a preliminary injunction against Internet bookseller BarnesandNoble.com on the eve of the holiday shopping season. Congress too has reacted to business

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

[2] Gary M. Hoffman & Gabriela I. Coman, Business Method Patents, 22 National Law Journal no. 25 (Feb. 14, 2000) at B8 col. 1.

[3] *Amazon.com, Inc. v. Barnesandnoble.com, Inc.*, 73 F. Supp.2d 1228 (W.D. Wash. 1999).

method patents, creating an infringement defense for an earlier inventor of a "method of doing or conducting business" that was later patented by another.

The impact of the *State Street Bank* opinion is not limited to computer software. As a Court of Appeals judge counseled in an opinion issued shortly after *State Street Bank*, "virtually anything is patentable."[4] Innovators in other endeavors in which patents were not traditionally sought appear to have heeded this advice, for they have also begun to obtain patents from the PTO. A review of the PTO Official Gazette reveals the following recently issued patent instruments:

- *Asset Valuation*. U.S. Patent No. 6,321,205 (Nov. 20, 2001) ("Method of and system for modeling and analyzing business improvement programs"), claims a technique of valuing intangible assets within a business enterprise.

- *Debt Management*. U.S. Patent No. 6,315,196 (Nov. 13, 2001) ("Method and system for debt deferment"), claims a method of debt deferment for a credit account of a customer of a financial institution.

- *Education Finance*. U.S. Patent No. 5,809,484 (Sept. 15, 1998) ("Method and apparatus for funding education by acquiring shares of students' future earnings"), claims a technique through which students pledge a portion of their future income in exchange for tuition payments.

- *Mortgages*. U.S. Patent No. 5,991,745 (Nov. 23, 1999), ("Reverse mortgage loan calculation system and process"), claims a reverse mortgage valuation technique for use by a financial institution.

- *Privatization*. U.S. Patent No. 6,112,188 (Aug. 9, 2000) ("Privatization Marketplace"), claims a method of transferring ownership rights in state-owned enterprises into private hands.

- *Risk Assessment.* U.S. Patent No. 6,278,981 (Aug. 21, 2001) ("Computer-implemented method and apparatus for portfolio compression"), claims a risk management engine that generates a compressed investment portfolio that closely mimics the behavior of a larger, target portfolio, but is easier to evaluate.

- *Stock Picking.* U.S. Patent No. 6,317,726 ("Automated strategies for investment management"), claims a technique for picking corporate stocks for investment.

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[4] Hughes Aircraft Co. v. United States, 148 F.3d 1384 (1998) (Clevenger, J., dissenting from denial of rehearing *in banc*.)

- *Working Capital Finance*. U.S. Patent No. 6,167,385 (Dec. 26, 2000) ("Supply chain financing and method"), claims a "just-in-time" financing technique that enables the enables the provision of financing to a supplier at the buyer's lower finance cost.

The contemporary ambitions of the patent system are not limited to financial methods. Other recently issued patents embrace a diversity of disciplines that span the entire range of human endeavor. Representative are:

- *Accounting*. U.S. Patent No. 6,324,437 (Nov. 27, 2001) ("System and method for managing the alteration of garments") claims a method for allocating the cost of operating a garment alterations workroom across departments within a store.

- *Architecture*. U.S. Patent No. 5,761,857 (June 6, 1998) ("Lots configuration and building position and method for residential housing"), claims an architectural scheme for eliminating hallways by placing staircases on the outside of buildings.

- *Marketing*. U.S. Patent No. 5,668,736 (Sept. 16, 1997) ("Method for designing and illustrating architectural enhancements to existing buildings"), claims a home remodeling business that comprises cataloging ideas, presenting the ideas to a client, allowing the client to select an idea, and the preparing a visual image of the selection.

- *Personal Instruction*. U.S. Patent No. 5,851,117 (Dec. 22, 1998) ("Building Block Training Systems and Training Methods"), claims a method for teaching custodial staff basic cleaning tasks.

- *Psychological Analysis*. U.S. Patent No. 5,190,458 (Mar. 2, 1993) ("Character assessment method"), claims a method of analyzing the drawings of subjects in order to obtain a psychological diagnosis.

- *Sports Methods*. U.S. Patent No. 5,616,089 (April 1, 1997) ("Method of putting"), claims a technique for swinging a golf club.

This Article explores recent trends concerning the patenting of methods of doing business, including financial services. In Part I, this Article begins by reviewing basic legal principles concerning patentable subject matter. Part II continues by discussing the *State Street* decision. Part III of this Article considers subsequent judicial developments, including the well-known *Amazon.com v. BarnesandNoble.com* electronic commerce patent litigation. In Part IV, this Article details the First Inventors Defense Act of 1999 and explores its consequences for the validity and enforceability of business method patents. Part V summarizes the positions of proponents and detractors of the patenting of business methods. Part VI

is a conclusion.

I. Principles of Patentability

The patent law allows individuals to obtain proprietary rights in their inventions.[5] Unlike other forms of intellectual property, such as copyrights and trademarks, patent rights arise only through governmental intervention. Inventors must submit applications to the PTO if they wish to obtain patent rights.[6] PTO officials known as examiners then assess whether the application merits the award of a patent.[7]

In deciding whether to approve a patent application, a PTO examiner will consider whether the submitted application fully discloses and distinctly claims the invention.[8] The examiner will also determine whether the invention itself fulfills certain substantive standards set by the patent statute.[9] Among the more important requirements are that the invention must be useful, novel and nonobvious. The requirement of usefulness, or utility, is satisfied if the invention is operable and provides a tangible benefit.[10] To be judged novel, the invention must not be fully anticipated by a prior patent, publication or other knowledge within the public domain.[11] A nonobvious invention must not have been readily within the ordinary skills of a competent artisan at the time the invention was made.[12]

Beyond utility, novelty and nonobviousness, there is a fourth, distinct requirement for an invention to be patented. The invention must also be judged to comprise subject matter the patent law was designed to protect.[13] This final gatekeeper to patentability is variously known as the requirement of "patent

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[5] 35 U.S.C. § 271(a) (providing patentee with exclusive rights to make, use, offer to sell, or sell within the United States, or import into the United States, the patented invention).

[6] 35 U.S.C. § 111.

[7] 35 U.S.C. § 131.

[8] 35 U.S.C. § 112.

[9] These requirement apply to so-called "utility patents." The patent statues also allow for design patents, *see* 35 U.S.C. § 171, and plant patents, *see* 35 U.S.C. § 161. Subject matter and other patentability standards differ somewhat for these more specialized patent regimes.

[10] 35 U.S.C. § 101; *see also Brenner v. Manson*, 383 U.S. 519 (1966).

[11] 35 U.S.C. § 102.

[12] 35 U.S.C. § 103.

[13] *Diamond v. Chakrabarty*, 447 U.S. 303, 309 (1980).

eligibility," "patentable subject matter," or "statutory subject matter."[14] This Article principally focuses upon this requirement of patentable subject matter, and in particular the propriety of the patenting of business methods.

Section 101 of the current patent law, the Patent Act of 1952, governs whether or not an invention comprises patentable subject matter. Section 101 allows patents to be granted for any "process, machine, manufacture, or composition of matter." As a result, an invention is eligible for patenting if it is a "process," which the Patent Act defines as a "process, art or method."[15] Alternatively, the invention may be a "machine," which has been interpreted to include any apparatus;[16] a "composition of matter," including synthesized chemical compounds and composite articles;[17] or a "manufacture," a broadly oriented, residual designation.[18]

The definition of patentable subject matter under the 1952 Act is nearly identical to that which appeared in predecessor federal patent statutes enacted as early as 1793.[19] On its face, the § 101 definition seems quite expansive. Many sorts of behavioral engagements, techniques and protocols could be characterized as a process within the meaning of the patent law. Further, almost any tangible product, artifact or thing could be seen as a composition of matter under § 101.[20] The only statutory exclusion from these broad categories of patentable subject matter concerns inventions useful solely to utilize special nuclear material or atomic energy in an atomic weapon.[21]

Despite this broad statutory language, the courts had traditionally crafted several exceptions to patentability. Variously expressed as bars to patents on business methods,[22] as well as such things as "mental steps," "algorithms," and "laws of nature," these doctrines held that certain subject matter was

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[14] Adelman, Martin J. et al. *Patent Law: Cases and Materials* (Minnesota: West Publishing Co., 1998).

[15] 35 U.S.C. § 100(b).

[16] *Nestle-Le Mur Co. v. Eugene, Ltd.*, 55 F.2d 854 (6th Cir. 1932).

[17] *Diamond v. Chakrabarty*, 447 U.S. 303 (1980).

[18] Ibid.

[19] *Diamond v. Diehr*, 450 U.S. 175, 192 (1981).

[20] Thomas, John R., "The Patenting of the Liberal Professions," *Boston College Law Review* 40 (1999), 1144.

[21] 42 U.S.C. § 2181(a).

[22] *See generally* Yoches, E. Robert & Pollack, Howard G., "Is the 'Method of Doing Business" Rejection Bankrupt?," *Federal Circuit Bar Journal* 3 (Spring 1993): 73; Tew, Geo. E., Method of Doing Business, *Journal of the Patent Office Society* 16 (Aug. 1934): 607.

unpatentable *per se*.[23] Most of these rules were corollary to the well-established tenet that the patent law does not protect abstract ideas.[24] In order to receive patent protection, inventors must claim discrete, operable products and processes, not broad categories of generalized intellectual concepts. By protecting downstream technology rather than upstream knowledge, the patent law is said to preserve "the basic tools of scientific and technological work" for all to employ.[25]

In particular, the business methods exception may be traced back at least as early as 1868. In *Ex parte Abraham*, the Patent Commissioner sensed that "[i]t is contrary to the spirit of the law . . . to grant patents for methods of book-keeping."[26] Nineteenth century courts also opined that "a method of transacting common business"[27] or "a mere contract"[28] were unpatentable. Perhaps the most thorough review of the proscription on business method patents was provided in the 1908 opinion of the United States Court of Appeals for the Second Circuit in *Hotel Security Checking Co. v. Lorraine Co.*[29] The patent at issue in *Hotel Security Checking* concerned a "method and means for cash-registering and account-checking" designed to prevent fraud by waiters and cashiers. The system employed certain forms that tracked sales and ensured that waiters submitted appropriate funds at the close of business. The Second Circuit invalidated the patent on the basis of knowledge within the public domain, finding that the patented invention "would occur to anyone conversant with the business."[30] However, the court further observed that "[a] system of transacting business disconnected from the means of carrying out the system is not, within the most liberal interpretation of the term, an art" that could be patented.[31]

Most of the judicial and Patent Office decisions discussing the business method exception arose under predecessor versions of the 1952 Patent Act. As noted above, the 1952 Act essentially maintained earlier definitions of patentable subject matter. However, although the legislative history pertaining to the 1952 Act is relatively sparse, it suggested that Congress intended to liberalize statutory subject matter requirements. In particular, committee reports accompanying the legislation provided that "anything under

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[23] Thomas, *supra* note 20, at 1145.

[24] *See Pioneer Hi-Bred International, Inc. v. J.E.M. Ag Supply, Inc.*, 200 F.3d 1374, 1376 (Fed. Cir. 2000).

[25] *Gottschalk v. Benson*, 409 U.S. 63 (1972).

[26] 1868 Comm'r Dec. 59, 59.

[27] *United States Credit Sys. Co. v. American Credit Indemnity Co.*, 53 F. 818, 819 (S.D.N.Y. 1893).

[28] *In re Moeser*, 27 App. D.C. 397, 310 (1906).

[29] 160 F. 467 (2d Cir. 1908).

[30] Ibid at 471.

[31] Ibid at 468.

the sun that is made by man" was amenable to patenting.[32]

In its 1980 decision in *Diamond v. Chakrabarty,*[33] the Supreme Court relied in part upon this legislative history in order to approve the patentability of a genetically engineered microorganism. As the Court confirmed in its later opinion in *Diamond v. Diehr,* it read this language to reveal a legislative intent to open the patent system to anything artificial.[34] During the 1990's, several Federal Circuit decisions followed this reasoning in order to ease and ultimately eliminate earlier restrictions upon the patenting of computer software.[35]

Mindful of these legislative and judicial developments, commentators questioned the continued vitality of the business methods exception to patentable subject matter.[36] When the Federal Circuit first turned to the issue in 1998 in its decision in *State Street Bank v. Signature Financial Group*, the court proved that these concerns were warranted. Given the significance of the *State Street Bank* decision, a detailed review of the facts and outcome of that litigation is appropriate here.[37]

II. The *State Street Bank* Case

Signature Financial Group held U.S. Patent No. 5,193,056, which was entitled "Data Processing System for Hub and Spoke Financial Services Configuration." The patent described a data processing system for implementing an investment structure known as a "Hub and Spoke" system. This system allowed individual mutual funds (Spokes) to pool their assets in an investment portfolio (Hub) organized as a partnership. According to the patent, this investment regime provided the advantageous combination of economies of scale in administering investments coupled with the tax advantages of a partnership.[38]

Maintaining a proper accounting of this sophisticated financial structure proved difficult. Indeed, due to "the complexity of the calculations, a computer or equivalent device is a virtual necessity to perform

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[32] 82d Cong., 2d sess. (1952), 5, S.Rept. 1979; 82d Cong., 2d Sess. (1952), 6, H.Rept. 1923.

[33] 447 U.S. 303 (1980).

[34] 450 U.S. 175, 182 (1981).

[35] *See In re Alappat*, 33 F.3d 1568 (Fed. Cir. 1994) (*in banc*); *In re Warmerdam*, 33 F.3d 1354 (Fed. Cir. 1994); *Arrhythmia Research Technology, Inc. v. Corazonix Corp.*, 958 F.2d 1053 (Fed. Cir. 1992).

[36] Del Gallo III, Rinaldo, "Are 'Methods of Doing Business' Finally Out of Business as a Statutory Rejection?," *IDEA: Journal of Law & Technology* 38 (1998), 403.

[37] *See also* Keeley-Domokos, Francisc Marius, "State Street Bank & Trust Co. v. Signature Financial Group, Inc.," *Berkeley Technology Law Journal* 14 (1998),153.

[38] 149 F.3d at 1370.

the task."[39] Signature's patented system purported to allow administrators to "monitor and record the financial information flow and make all calculations necessary for maintaining a partner fund financial services configuration."[40] In addition it tracked "all the relevant data determined on a daily basis for the Hub and each Spoke, so that aggregate year end income, expenses, and capital gain or loss can be determined for accounting and for tax purposes for the Hub and, as a result, for each publicly traded Spoke."[41]

Following PTO issuance of the patent, Signature entered into licensing negotiations with a competitor, State Street Bank, that ultimately proved unsuccessful. State Street Bank then brought a declaratory judgment action against Signature, seeking the invalidity of the patent. The district court granted summary judgment in favor of State Street Bank under two alternative grounds.[42] First, the court concluded that the invention was merely an abstract mathematical algorithm:

> At bottom, the invention is an accounting system for a certain type of financial investment vehicle claimed as means for performing a series of mathematical functions. Quite simply, it involves no further physical transformation or reduction than inputting numbers, calculating numbers, outputting numbers, and storing numbers. The same functions could be performed, albeit less efficiently, by an accountant armed with pencil, paper, calculator, and a filing system.[43]

The district court then buttressed its holding by turning to "the long-established principle that business 'plans' and 'systems' are not patentable."[44] The court judged that "patenting an accounting system necessary to carry on a certain type of business is tantamount to a patent on the business itself. Because such abstract ideas are not patentable, either as methods of doing business or as mathematical algorithms," the patent was held invalid.[45]

On appeal, the Federal Circuit reversed. Writing for a three-judge panel, the late Judge Giles S. Rich found the patent claimed not an abstract idea but a programmed machine that produced a "useful,

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[39] 149 F.3d at 1371.

[40] 149 F.3d at 1371.

[41] 149 F.3d at 1371.

[42] *State Street Bank and Trust Co. v. Signature Financial Group, Inc.*, 927 F. Supp. 502 (D. Mass. 1996).

[43] 927 F. Supp. at 515.

[44] 927 F. Supp. at 515-16.

[45] 927 F. Supp. at 516.

concrete, and tangible result."[46] "This renders it statutory subject matter, even if the useful result is expressed in numbers, such as price, profit, percentage, cost, or loss."[47] According to the court, "[t]he question of whether a claim encompasses statutory subject matter should not focus on which of the four categories of subject matter a claim is directed to--process, machine, manufacture, or composition of matter--but rather on the essential characteristics of the subject matter, in particular, its practical utility."[48] The Federal Circuit further explained that:

> Today, we hold 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, formula, or calculation, because it produces "a useful, concrete and tangible result" -- a final share price momentarily fixed for recording and reporting purposes and even accepted and relied upon by regulatory authorities and in subsequent trades.[49]

The Federal Circuit then turned to the district court's business methods rejection, opting to "take the opportunity to lay this ill-conceived exception to rest."[50] Judge Rich analyzed *Hotel Security Checking* and other cases denying patents upon methods of doing business. He concluded that each of these decisions had actually been decided on other grounds, such as that the patented invention would have been obvious over knowledge within the public domain. The Federal Circuit also reasoned that the case law on business methods had largely been decided prior to the 1952 Patent Act. The Federal Circuit closed by directing that methods of doing business were to be subject only to the same patentability analysis as any other sort of process.

The Supreme Court announced that it would decline review of the Federal Circuit's *State Street Bank* decision on January 11, 1999.[51] Some observers believe that unless the Supreme Court develops an interest in patent eligibility issues in the future, a decision from the lower courts contrary to *State Street Bank* is unlikely. As a result, the business methods exception to patentable subject matter is no longer extant. Subject to the other requirements of the patent laws, business methods may be the subject of patent protection within the United States.

III. Judicial Developments Post-*State Street Bank*

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[46] 149 F.3d at 1373 (quoting *In re Alappat*, 33 F.3d at 1544).

[47] 149 F.3d at 1375.

[48] 149 F.3d at 1375.

[49] 149 F.3d at 1373.

[50] 149 F.3d at 1375.

[51] 525 U.S. 1093 (1999) (denying petition for certiorari).

Judicial encounters with business method patents did not end in *State Street Bank*. Subsequent litigation has provided further details on the scope and enforceability of patents towards business methods. These developments have confirmed and to some degree extended the holding that methods of doing business constitute patentable subject matter.

A. *AT&T v. Excel Communications*

A second Federal Circuit decision, *AT&T Corp. v. Excel Communications Inc.*,[52] followed the reasoning of *State Street Bank* in upholding a patent claiming a data processing technique.[53] This litigation arose from AT&T's efforts to enforce U.S. Patent No. 5,333,184, which was directed towards the composition of billing records used in telephone networks.[54] The AT&T patent claimed a method for a telephone company to determine whether both the caller and the recipient of a long-distance telephone subscribed to the company's network. If so, the telephone company could provide a different billing treatment to such calls, most likely discounting the fee in order to encourage both individuals to subscribe to its services.

The invention relied upon the fact that when a customer makes a long-distance telephone call, the telephone network contemporaneously maintains billing records. These records include such information as the originating and terminating telephone numbers, as well as the length of the call. Also associated with the call is data indicating an individual's chosen "primary interexchange carrier," or PIC. A PIC is essentially the equivalent of a long-distance telephone service provider.

The claimed invention called for the addition of a discrete item of data, termed the "PIC indicator," to the billing record. The value of the PIC indicator was determined by analyzing the data identifying the primary interexchange carriers of the originator and recipient of the long-distance call. If both customers have subscribed to the same phone company, the PIC indicator is set to a logical "one." Otherwise the PIC indicator remains at the value of "zero." The phone company may then readily apply its discounted rate to any call where the PIC indicator is set to one, without more extensive data processing at the time of billing.

In an opinion issued prior to the release of *State Street Bank*, the United States District Court for the District of Delaware held that the claimed invention was not patentable subject matter.[55] Judge

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[52] 172 F.3d 1352 (Fed. Cir.), *cert. denied*, 120 S.Ct. 368 (1999).

[53] *See* Cretsinger, Cathy E., "AT&T Corp. v. Excel Communications Corp.," *Berkeley Techology Law Journal* 15 (2000): 165.

[54] U.S. Patent No. 5,333,184 (July 26, 1994) ("Call message recording for telephone systems.").

[55] 1998 WL 175878 (D. Del. March 27, 1998).

Robinson described the patent as "claiming an invention whereby certain information that is already known within a telecommunications system (the PICs of the originating and terminating subscribers) is simply retrieved for an allegedly new use in billing."[56] With this sense of the claimed invention, the court held that "a change in the data's format should not serve to convert nonpatentable subject matter into patentable subject matter."[57]

Following an appeal, the Federal Circuit reversed. Writing for a three-judge panel, Judge Plager held that the patented invention "comfortably" fell within the scope of statutory subject matter.[58] Judge Plager followed the holding of *State Street Bank* in concluding that the test for patentable subject matter was whether an invention achieved a "useful, concrete, tangible result."[59] Because AT&T's claimed process produced "a number which had specific meaning," it could be employed in a discrete setting and was therefore patentable.[60]

In closing the *AT&T v. Excel* opinion, the Federal Circuit was quick to note that it had only addressed the subject of patent eligibility. According to Judge Plager,"the ultimate validity of these claims depends upon satisfying the other requirements for patentability . . . ."[61] These words proved prophetic. Upon the return of the litigation to the Delaware district court, Judge Robinson concluded that the invention claimed in the AT&T patent was already known within the public domain. More particularly, the court judged that the well-known MCI Friends & Family program either wholly anticipated or made obvious the patented invention.[62] As a result, the district court held that the AT&T patent was invalid under the legal requirements of novelty and nonobviousness.[63]

The *AT&T v. Excel* opinion suggests that the Federal Circuit will continue to follow its earlier decision in *State Street Bank*. The nature of the invention in *AT&T v. Excel* also indicates that the Federal Circuit considers inventions in the fields of data processing and information transformation to comprise patentable subject matter. Finally, *AT&T v. Excel* reminds the reader that all patented inventions are subject to the full range of requirements under the Patent Act. Particularly noteworthy are the patentability

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[56] Ibid at *6.

[57] Ibid at *7.

[58] 172 F.3d at 1361.

[59] 172 F.3d at 1358.

[60] 172 F.3d at 1358.

[61] 172 F.3d at 1361.

[62] 52 U.S.P.Q.2d 1865 (D. Del. Oct 25, 1999).

[63] 52 U.S.P.Q.2d at 1879-84.

standards of novelty and nonobviousness. Because an invention must be both new and beyond the ordinary skills of a artisan within that technical field, simply because an invention may comprise patentable subject matter does not necessarily mean that the invention may be the subject of a valid patent.

B. *Amazon.com v. BarnesandNoble.com*

The federal district courts have also considered patents concerning methods of doing business. Perhaps the most well-known lawsuit to date is *Amazon.com, Inc. v. Barnesandnoble.com, Inc.*[64] Amazon.com obtained a patent on a method and system through which a consumer may complete a purchase order for an item through the Internet using only a single action, such as one click of a mouse button.[65] The patent was issued on September 28, 1999. On October 21, 1999, Amazon.com brought a patent infringement suit against a rival website, Barnesandnoble.com. On December 1, 1999, the District Court for the Western District of Washington enjoined Barnesandnoble.com from using its so-called "Express Lane" one-click ordering system on its website. The Court of Appeals for the Federal Circuit declined to intervene on an expedited basis, resulting in the deletion of one-click ordering from the Barnesandnoble.com website on the eve of the holiday shopping season.[66]

The Amazon.com litigation resulted in a considerable debate about the propriety of patent rights on electronic commerce concepts. The one-click patent appears to have been anticipated by the humble vending machine. Following the laconic gait of the appeals process, on February 14, 2001, the Court of Appeals for the Federal Circuit vacated the lower court's injunction, reasoning that the one-click patent had likely been improvidently granted.[67] The one-click litigation continues in the lower courts, however, and we await a final resolution of this dispute.

IV. The First Inventor Defense Act of 1999

Legal developments with respect to business methods patents have not been limited to the courts.

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[64] 73 F. Supp.2d 1228 (W.D. Wash. 1999).

[65] U.S. Patent No. 5,960,411 (28 Sept. 1999) ("Method and system for placing a purchase order via a communications network").

[66] "BarnesandNoble.com Ordering System Is Enjoyed As Infringing Amazon.com Patent," *Bureau of National Affairs Patent, Trademark & Copyright Journal* 59 (10 Dec. 1999), 355.

[67] 239 F.3d 1343 (Fed. Cir. 2001).

In late 1999, Congress lent final approval to the American Inventors Protection Act of 1999.[68] Subtitle C of the American Inventors Protection Act, known as the First Inventor Defense Act of 1999, creates an infringement defense for an earlier inventor of a "method of doing or conducting business" that was later patented by another. The defendant must have reduced the infringing subject matter to practice at least one year before the effective filing date of the patent and made commercial use of that subject matter in the United States before the effective filing date.

The impetus for this provision lies in the rather complex relationship between the law of trade secrets and the patent system. Trade secrecy protects individuals from misappropriation of valuable information that is useful in commerce. One reason an inventor might maintain the invention as a trade secret rather than seek patent protection is that the subject matter of the invention may not be regarded as patentable. Such inventions as customer lists or data compilations have traditionally been regarded as amenable to trade secret protection but not to patenting.[69] Inventors might also maintain trade secret protection due to ignorance of the patent system or because they believe they can keep their invention as a secret longer than the period of exclusivity granted through the patent system.[70]

It is important to note from the outset that the patent system has not favored trade secret holders. Well-established patent law provides that an inventor who makes a secret, commercial use of an invention for more than one year prior to filing a patent application at the PTO forfeits his own right to a patent.[71] This policy is based principally upon the desire to maintain the integrity of the statutory proscribed patent term. The patent law grants patents a term of twenty years, commencing from the date a patent application is filed.[72] If the trade secret holder could make commercial use of an invention for many years before choosing to file a patent application, he could disrupt this regime by delaying the expiration date of his patent.

On the other hand, settled patent law principles established that prior secret uses would not defeat the patents of later inventors.[73] If an earlier inventor made secret commercial use of an invention, and

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[68] P.L. 106-113, as part of the Intellectual Property and Communications Omnibus Reform Act of 1999 (S. 1948), attached by reference to the Consolidated Appropriations Act for Fiscal Year 2000.

[69] Restatement of Unfair Competition § 39.

[70] Friedman, David D. "Some Economics of Trade Secret Law," 5 *Journal of Economic Perspectives* (1991), 61, 64.

[71] 35 U.S.C. § 102(b). *See Metallizing Engineering Co. v. Kenyon Bearing & Auto Parts*, 153 F.2d 516, *cert. denied*, 328 U.S. 840 (1946).

[72] 35 U.S.C. § 154.

[73] *W.L. Gore & Associates. v. Garlock, Inc.*, 721 F.2d 1540 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984).

another person independently invented the same technology later and obtained patent protection, then the trade secret holder could face liability for patent infringement. This policy was based upon the reasoning that once issued, published patent instruments fully inform the public about the invention, while trade secrets do not. As between a subsequent inventor who patented the invention, and thus had disclosed the invention to the public, and an earlier trade secret holder who had not, the law favored the patent holder.

The *State Street Bank* decision focused attention upon the relationship between patents and trade secrets. Inventors of methods of doing business traditionally relied upon trade secret protection because such inventions had long been regarded as unpatentable subject matter. As a result, inventors of innovative business methods obtained legal advice not to file applications at the PTO on their inventions. This advice was sound under the patent law as it then stood.

State Street Bank overturned the historical bar denying patents on methods of doing business. As a consequence, inventors in fields ranging from such sectors as finance, insurance and services have sought proprietary interests in their inventions through the patent system. The change in this background principle was perceived to have harmed individuals that invented business methods prior to the issuance of the *State Street Bank* opinion. Many of these inventors had maintained their innovative business methods as trade secrets for many years. As a result, they were unable belatedly to obtain patent protection on their business methods. As well, because trade secrets did not constitute prior art against the patent applications of others, a subsequent inventor would be able to obtain patent protection. Under these circumstances, a trade secret holder could find himself an adjudicated infringer of a patented business method that he actually invented first.[74]

The First Inventor Defense Act of 1999 reconciled these principles by providing an infringement defense for an earlier inventor of a method of doing business that was later patented by another. This infringement defense is subject to several qualifications. First, the defendant must have reduced the infringing subject matter to practice at least one year before the effective filing date of the application. Second, the defendant must have commercially used the infringing subject matter prior to the effective filing date of the patent. Finally, any reduction to practice or use must have been made in good faith, without derivation from the patentee or persons in privity with the patentee.

Although the First Inventor Defense Act addresses transition problems between the regimes of trade secrets and patents, it does not directly assess the propriety of patenting business methods in the first instance. It may be implied that the First Inventor Defense Act assumes an approving posture towards patented methods of doing business, however. As a result, subsequent courts would most likely consider Congress to have condoned business methods patents when considering them in the future.

V. The Debate Over Patenting Methods of Doing Business

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[74] Thomas, John R.. "The Post-Industrial Patent System," *Fordham Intellectual Property, Media & Entertainment Law Journal* 10 (1999), 32 n.156.

There has been considerable debate over the desirability of extending the reach of the patent system to methods of doing business. Both proponents and detractors of business method patents have emerged. Before considering the views of various participants in the business method patent debate, it should be noted that most commentators consider this issue to be an important one. In the patent law, few constraining doctrines allay the proprietary rights associated with granted patents.[75] The adjudicated infringer need not have derived the patented invention from the patentee, as liability rests solely upon a comparison of the text of the patent instrument with an accused infringement.[76] The patent law also lacks a robust experimental use exemption in the nature of copyright law's fair use privilege.[77] Although accused infringers theoretically may employ the defense of patent misuse, most commentators agree that the Federal Circuit has minimized the application of the patent misuse doctrine.[78] The decision to subject particular areas of endeavor to the patent system is therefore of particular importance. Once an invention has been patented, it is subject to a robust set of proprietary rights.

A. Perceived Benefits of Business Method Patents

Supporters of *State Street Bank* have urged that business methods are as subject to costly research and development efforts as the inventions traditionally amenable to patenting. For example, suppose a diversified enterprise spends considerable resources on research in traditional manufacturing processes, and spends the same amount on research on business methods. It may be questioned why the reward of exclusive patent rights is available in one field of costly research and not in another.[79]

Observers have also argued that future technological process will occur as much in activities as business methods and information processing as in traditional manufacturing techniques. This argument urges that the patent system should not be confined to technologies of the Industrial Revolution, but should

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[75] *See* 35 U.S.C. § 271(a) (1994) (the patentee has the exclusive right to make, use, sell, offer to sell, or import into the United States the patented invention).

[76] Adelman, *supra* note 18, at 860-61.

[77] *See* Rebecca S. Eisenberg, *Patents and the Progress of Science: Exclusive Rights and Experimental Use*, UNIVERSITY OF CHICAGO LAW REVIEW 56 (1989), 1017, 1023; Rebecca S. Eisenberg, *Proprietary Rights and the Norms of Science in Biotechnology Research*, YALE LAW JOURNAL 97 (1987), 177, 222.

[78] *See* Note, *Is the Patent Misuse Doctrine Obsolete?*, HARVARD LAW REVIEW 110 (1997), 1922; Mark A. Lemley, Comments, *The Economic Irrationality of the Patent Misuse Doctrine*, CALIFORNIA LAW REVIEW 78 (1990), 1599.

[79] *See* Melton, Michael E., "The Business of Business Method Patents," *Practising Law Institute Patents, Copyrights, Trademarks and Literary Property Course Handbook Series* 589 (Feb. 2000), 97 (cataloguing sorts of innovative business methods).

embrace the inventions of the Information Age as well.[80] To do otherwise would be arbitrary and unfair, according to commentator Sari Gabay. As with other observers, Gabay contends that incentives to innovate are required in this arena as well as in fields traditionally considered amenable to patenting.[81]

Proponents of business method patenting have also argued that the U.S. patent system has granted and enforced these sorts of patents for some time. They point to such decisions as *Markman v. Westview Instruments*,[82] a well-known patent infringement case from the Supreme Court. The Markman litigation involved a patent entitled "Inventory Control and Reporting System for Drycleaning Stores."[83] This patent allowed dry cleaning establishments to track the location of individual articles of clothing as they moved throughout the cleaning process. The Markman patent could easily be characterized as directed towards a method of doing of business, supporters say, yet the patentability of this system was never questioned by any court or commentator.

Commentators such as attorney Carl Oppendahl further note that such enterprises as Merrill Lynch and Citibank obtained numerous patents on financial service products long before the Federal Circuit issued *State Street Bank*. One of the Merrill Lynch patents, U.S. Patent No. 4,346,442, was involved in litigation before the District Court for the District of Delaware.[84] This patent, entitled "Securities Brokerage–Cash Management System," claimed a computerized method of managing certain financial services. In 1983, the Delaware federal district court expressly found that the asserted patent "claims statutory subject matter because the claims allegedly teach a method of operation on a computer to effectuate a business activity."[85] Attorney Walter Hanchuk therefore explains that *State Street Bank* merely confirmed and focused attention upon a trend that had occurred for many years.[86] As stated

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[80] *See* Richard Poynder, "Who Pays, Who Plays? Internet Patents Test The Limits of National Authority on The Web," 9 *Corporate Legal Times* no. 96 at 11, col. 1 (Nov. 1999).

[81] Gabay, Sari, "The Patentability of Electronic Commerce Business Systems in the Aftermath of *State Street Bank & Trust Co. v. Signature Financial Group, Inc.*," Journal of Law and Policy 8 (1999), 179, 226.

[82] 116 S.Ct. 1384 (1996).

[83] U.S. Patent No. Re. 33,054.

[84] *Paine, Webber, Jackson & Curtis, Inc. v. Merrill, Lynch, Pierce, Fenner & Smith, Inc.*, 564 F. Supp. 1358 (D. Del. 1983).

[85] Ibid at 1369.

[86] Hanchuk, Walter, "Assessing the Real Impact of *State Street*," *New York Law Journal* 223 (24 April 2000), 7.

most succinctly by attorney Thomas S. Hahn, "There is no revolution here."[87]

Similarly, some patent law experts argue that no meaningful distinction separates a method of doing business as opposed to a method of doing some other activity. Patented inventions are generally put to commercial uses by business enterprises. According to some commentators, whether an observer chooses to view an invention as a "business method" or something else is a matter of characterization rather than a meaningful substantive difference.

Commentators have also lauded the *State Street Bank* decision as simplifying the law concerning the patentability of computer software.[88] In recent years, the rules determining whether software could be patented or not could be characterized as complex. Whether a particular software program could be patented or not was often determined not by the substance of the invention, but by the form in which the patent application was drafted. More specifically, skillful patent drafters would often claim software-related inventions as a hard-wired computer, so that the invention looked less like a mathematical algorithm and more like a machine. This trend tended to place a premium on artful claims drafting and made patents more difficult to read.[89] Following *State Street Bank*, proponents contend that less need should arise for elaborate claims drafting exercises in the area of software inventions. Any software is patent eligible if it achieves a useful, concrete and tangible result.

Finally, attorneys Michael T. Platt, Francis X. Gindhart, and Laurence E. Stein observe that in order to obtain patent protection, inventors must fully disclose their inventions such that a skilled artisan could practice the invention without undue experimentation.[90] Platt, Gindhart and Stein believe that information available in published patent applications serves as a rich library of prior knowledge that serves as a starting point for subsequent inventors. A patent system that denied protection to business methods would cause business method innovators to conceal their inventions as trade secrets. Other valuable business methods might simply go unknown for want of publicity. According to Platt, Gindhart and Stein, now that the patentability of business methods has been confirmed, the commercial community should benefit from the public disclosure that accompanies patent issuance.[91]

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[87] Hahn, Thomas S., "Much Ado About Method Patents," *The San Francisco Recorder*, January 1999, Intellectual Property Supplement, S21.

[88] Cantzler, Christopher S., "State Street: Leading the Way to Consistency for Patentability of Computer Software," *University of Colorado Law Review* 71 (Spring 2000), 423.

[89] Thomas, John R., "Of Text, Technique and the Tangible: Drafting Patent Claims Around Patent Rules," 17 *John Marshall Journal of Computer and Information Law* (1998), 219, 222.

[90] 35 U.S.C. § 112 ¶ 1.

[91] Platt, Michael T., et al., "Patenting Business Genius," *Metropolitan Corporate Counsel* 7 (Feb. 1999), 19.

B. Perceived Negative Consequences of Business Method Patents

Detractors of the *State Street Bank* opinion have attempted to counter the argument of proponents of business method patents. Some of these detractors have expressed concerns about the lack of empirical evidence supporting the extension of the patent system towards business methods. The Federal Circuit decided *State Street Bank* based upon its interpretation of terms that have appeared for over two centuries in our patent statute, rather than strong evidence that economic gains would result from business method patenting. These commentators believe that historical experience teaches that the patent system is susceptible to abuse by the monopolist and speculator. Absent compelling evidence for market interference in business method innovation, Professor Lawrence Lessig and other commentators contend that the stewards of the patent system should proceed with moderation when assessing the scope of patentable subject matter.[92]

In his book, OWNING THE FUTURE, Seth Shulman also suggests that a broad sense of patentable subject matter may harm rather than foster economic progress.[93] According to Shulman, the existence of numerous proprietary interests in particular market segments may create barriers to entry that stifle competition.[94] Attorney Jeffrey A. Berkowitz notes the particular concern that the expansive and innovative Internet of the late 1990's may instead be constrained by owners of patents claiming electronic commerce business concepts.[95] A New York Times Magazine article was to similar effect, deeming *State Street Bank* and its progeny a "ridiculous phenomenon [that] could kill e-commerce."[96]

Detractors also argue that effort alone is insufficient to justify the reward of patent protection for an innovative business methods. They point to the Supreme Court's opinion in *Feist Publications, Inc. v. Rural Telephone Service Co.*,[97] which adopted this position with respect to the copyright laws. There, the Court rejected "sweat of the brow" as a basis for copyright protection by reasoning that effort alone

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[92] Lessig, Lawrence, The Problem with Patents, *The Industry Standard* ("Rather than unbounded protection, our tradition teaches balance and the dangers inherent in overly strong intellectual- property regimes.") (April 23, 1999) (available at **http://www.thestandard.com/article/display/** 0,1151,4296,00 .html).

[93] Shulman, Seth, *Owning the Future* (Boston: Houghton Mifflin, 1999), 3-6.

[94] *See also* Maeir, Gregory J., et al., "Patent Protection Provides Long-term Net Strategy," *National Law Journal* 22 (18 Oct. 1999), B11; Raskind, Leo J., "The *State Street Bank* Decision: The Bad Business of Unlimited Patent Protection for Methods of Doing Business," *Fordham Intellectual Property, Media and Entertainment Law Journal* 10 (1999), 61.

[95] Berkowitz, Jeffrey A., "Patenting the Com in '.Com,'" *Practicing Law Institute/Patent* 588 (Jan. 2000), 331, 334.

[96] Gleick, James, "Patently Absurd," *The New York Times Magazine* (12 March 2000), 47.

[97] 499 U.S. 340 (1991).

was not enough to make particular subject matter copyrightable. The *Feist* Court concluded that an ordinary "white pages" telephone directory was not subject to the copyright laws because it lacked even a minimal degree of creative expression. Because a telephone directory is not a work of authorship within the meaning of the copyright laws, it was not the kind of work the copyright laws were designed to protect.[98] Applied to the patenting of business methods, the *Feist* opinion may suggest that the mere expenditure of resources should not by itself result in an award of intellectual property rights.

Some patent law experts believe that business method patents may be successfully distinguished from other types of patents. They point to the First Inventor Protection Act of 1999, which creates an infringement defense only for practitioners of "methods of doing or conducting business." They also note that Article 52 of the European Patent Convention has for many years expressly disallowed patents on "schemes, rules and methods for performing mental acts, playing games or doing business."[99] Each of these measures necessarily requires courts to distinguish between business methods and other sorts of inventions, suggesting that a plausible distinction can be drawn.

Professor Robert A. Kreiss and other commentators have argued that business methods do not fall within the "useful Arts," the Constitutional expression of the subject matter appropriate for patenting.[100] These detractors have urged that the sparse materials available regarding the term "useful Arts" suggest that the Framers of the Constitution were unlikely to view every created thing as patentable.[101] The Framers undoubtedly contemplated the industrial, mechanical and manual arts of the late eighteenth century, in contrast to the seven "liberal arts" and the four "fine arts" of classical learning.[102]

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[98] *See* Ginsburg, Jane C., "No Sweat?' Copyright and Other Protection of Works of Information After Feist v. Rural Telephone," *Columbia Law Review* 92 (1992), 338.

[99] Thomas, *supra* note 20, at 1179. *See* Convention on the Grant of European Patents, 13 International Legal Materials 268 (1974) (amended by Decision of the Administrative Council of the European Patent Organization of 21 Dec. 1978).

[100] Kreiss, Robert A., "Patent Protection for Computer Programs and Mathematical Algorithms: The Constitutional Limitations on Patentable Subject Matter," *New Mexico Law Review* 29 (1999), 31. *See also* Durham, Alan L., "'Useful Arts' in the Information Age," *Brigham Young University Law Review* 1999 (1999), 1419; Thomas, *supra* note 20, at 1164.

[101] *See The Federalist* No. 43, at 271-72 (James Madison) (Clinton Rossiter ed. 1961) ("The copyright of authors has been solemnly judged in Great Britain to be a right of common law. The right to useful inventions seems with equal reason to belong to the inventors. The public good fully coincides in both cases with the claims of individuals.").

[102] *See* Coulter, Robert I., "The Field of the Statutory Useful Arts, Part II," *Journal of the Patent Office Society* 34 (1952), 487, 494 ("The seven historic 'liberal arts' were: grammar, logic (dialectics), rhetoric, arithmetic, geometry, music and astronomy[.] The four 'fine arts' were: painting, drawing, architecture and sculpture; to which were often added: poetry, music, dancing and drama.").

Patent law experts have also suggested that the Framers were undoubtedly aware of the English experience leading to the Statute of Monopolies. Parliament enacted the Statute of Monopolies in 1624 in order to curb the grant of abusive monopolies by the Crown. In order to generate income, the Crown had awarded exclusive rights to private parties for such activities as manufacturing playing cards and importing salt. These monopolies resulted in higher consumer prices and were subject to considerable public disapproval. Parliament reacted by enacting the Statute of Monopolies, which proscribed the grant of monopolies except in one area: "the sole working or makinge of any manner of New Manufactures with this Realme, to the first and true Inventor."[103]

The Court of Customs and Patent Appeals, a predecessor of the Federal Circuit, commented on the Statute of Monopolies in 1951. The court explained that the Constitution authorized Congress to enact a patent law because "those who formulated the Constitution were familiar with the long struggle over monopolies so prominent in English history, where exclusive rights to engage even in ordinary business activities were granted so frequently by the Crown . . . ." Professor Robert P. Merges and other commentators have suggested that the *State Street Bank* court did not sufficiently respect the policy concerns animating the Statute of Monopolies.[104] Citing more familiar historical events such as the Boston Tea Party, some have also noted an American antipathy to exclusive rights in business methods.

Appraisals of the *State Street Bank* decision have also questioned the Federal Circuit's adoption of what appears to be a very lenient standard of patentable subject matter. According to *State Street Bank*, whether a particular invention is eligible for patenting depends upon "the essential characteristics of the subject matter, in particular, its practical utility."[105] This holding appears to collapse the patentable subject matter into another patentability requirement known as utility. A perceived difficulty with this approach is that, since the early nineteenth century, the utility standard has been understood to present a distinct, additional hurdle to patentability.[106] *State Street Bank* appears to reduce the statutory categories of patentable subject matter [process, machine, machine and composition of matter] into claim-formatting protocols. After *State Street*, it is hardly an exaggeration to say that if you can name, you can claim it.

C. The Patent Quality Problem

Although observers differ in their support or opposition of patents on business methods, many have

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[103] 21 Jam. I, ch.3, § 6. *See generally* Kyle, Chris, "But a New Button to an Old Coat: The Enactment of the Statute of Monopolies," *Journal of Legal History* 19 (1998), 203.

[104] Merges, Robert P., "As Many As Six Impossible Patents Before Breakfast: Property Rights for Business Concepts and Patent System Reform," *Berkeley Technology Law Journal* 14 (1999), 577.

[105] *State Street Bank*, 149 F.3d at 1375.

[106] *See Bedford v. Hunt*, 3 F. Cas. 37, 37 (C.C.D. Mass. 1817) (No. 1,217); *Lowell v. Lewis*, 15 F. Cas. 1018, 1019 (C.C.D. Mass. 1817 (No. 8,568).

stated their view that the quality of issued business method patents is poor. In particular, numerous commentators believe that the PTO should have rejected many business method patent applications rather than have allowed them to issue as granted patents. A complaint that is frequently made is that many business method patents merely appropriate well-known business activities that have been adopted to the Internet in a straightforward fashion.[107] As stated by attorney Robert Gorman, "There are going to be a lot of patents that issue that shouldn't be, and it will cause a lot of problems. Companies are trying to patent inventions as old as the wheel. They're just doing it with the Internet."[108]

Attorney John Altmiller has offered an explanation for this perception of poor patent quality. Because the patentability of business methods was unclear prior to the Federal Circuit's *State Street Bank* decision, the PTO has not developed a library of prior art materials that examiners may consult when considering whether to grant or deny a business method patent application.[109] Even if a prior art library were available, Professor Rochelle Dreyfuss has also observed that many business methods are not routinely memorialized in written form. They instead are maintained in the heads and practices of business persons.[110] While such practices should ordinarily be considered prior art under U.S. law,[111] they are not readily located by PTO examiners.

Of course, the PTO has issued many patents that were later invalidated during litigation. In part this possibility occurs because U.S. patent law features a very encompassing definition of the prior art that bears upon each patent or patent application. For example, a publication in an obscure foreign language may render a U.S. patent invalid, even if the knowledge within that publication was never held within the United States.[112] Knowledge publicly available within the United States may also have patent-defeating effect, even if it has never been memorialized in written form.[113] The PTO simply lacks the resources to perform an exhaustive search of such references. Further, because most patented inventions are probably never commercialized, an exhaustive search in connection with every patent application may present needless costs. When the patent holder later attempts to enforce the issued patent in court, an accused

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[107] See Mullaney, Timothy J., "These Web Patents Aren't Advancing the Ball," *Business Week* (17 April 2000), 62; Scott Thurm, "The Ultimate Weapon: It's the patent," *The Wall Street Journal* (17 April 2000), R18.

[108] Greene, *supra* note 3, at 16.

[109] Ibid.

[110] Dreyfuss, Rochelle Cooper, "Testimony Before the House Judiciary Committee, Subcommittee on Courts and Intellectual Property," (9 March 2000) (available on Westlaw at 2000 WL 11069340).

[111] 35 U.S.C. § 102.

[112] 35 U.S.C. § 102(b).

[113] 35 U.S.C. § 102(a).

infringer often has significant incentives to locate such patent-defeating prior art.

The stakes may be higher for business method patents, however. Professor Dreyfuss has observed business method and data transformation patents concern information rather than industrial products. As noted by economists Carl Shapiro and Hal Varian, information products tend to exhibit lock-in and network externalities.[114] Lock-in occurs when consumers face high costs in switching from one brand of technology to another.[115] Network externalities result from a situation of positive feedback, where the value of connecting to a network depends upon the number of other people connected to it. Applied to economic competition, the typical result of network effects is a monopolistic, winner-take-all market. Telephony and computer operating systems present examples of markets with network externalities.[116]

Professor Dreyfuss explains that business method patents need not be considered valid for very long in order to have substantial market impact due to lock-in and network externalities.[117] Suppose, for example, that an Internet-based electronic retailer obtains a patent on a method of ordering merchandise, conducting an auction or enlisting associated retailers. Such patents may be invalid because they merely claim obvious electronic variants of well-known commercial activities. Competitors of the patentee may face delays of several years as they seek to strike down such patents, however. Indeed, the high costs of patent litigation may discourage other retailers from challenging a patent at all. As a result, competitors of the patentee may be discouraged from engaging in the patented method. Consumers who wish to take advantage of the patented business features must transact with the patentee.

According to Professor Dreyfuss, the market distortions caused by the issuance of an invalid business method patent may be significant. Once a consumer has entered his name, address and billing information into one company's site, he may be reluctant to engage in the same tedious task with another Internet retailer. As a result, the consumer is locked into that retailer, even if the patent is later invalidated.

Network effects may also play a role here. Internet retailers often analyze the information they receive from consumers in order to predict what other products individual consumers might enjoy. The accuracy of these predictions depends in part upon the number of consumers. Thus, the larger the network of consumers who patronize a particular web site, the more valuable it is to patronize that web site. Internet auction houses also appear to operate more effectively with more propsective sellers and bidders available. In sum, the issuance of invalid business method patents may produce significant market distortions.

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[114] Shapiro, Carl, & Varian, Hal, *Information Rules: A Strategic Guide to the Network Economy* (Boston: Harvard Business School Press, 1999).

[115] Ibid at 104.

[116] Ibid at 173-79.

[117] Dreyfuss, *supra* note 110.

VI. Conclusion

Commentators have differed in their views on whether the *State Street Bank* decision will help or hinder entrepreneurs and small, entrepreneurial firms. Some observers believe the availability of patent protection will enhance the ability of start-up companies to obtain venture capital and to prevent others from free riding off their innovative business concepts. Although business method patents may benefit entrepreneurs and small firms, attorney Michael E. Melton notes that the availability of patent protection can act as a double-edged sword.[118] Many patentees may also infringe business method patents held by competitors. According to Melton, such a patentee "could force a company to pay a royalty for practicing a business method the company considered proprietary."[119]

State Street Bank also appears to provide many other sorts of industry actors with the opportunity to appropriate business and other techniques through the patent system. Prior to *State Street Bank*, legal, financial, insurance and service industries were generally faced with two options: either protect an innovation as a trade secret or allow the innovation to enter the public domain. The sudden injection of the patent system into existing markets provides market entrants with a third option, in effect subjecting them to a private regulatory environment. Private parties are now able to limit the conduct of their competitors through proprietary patent interests.[120]

One apparent difficulty for small businesses is that the PTO issues new patents each week.[121] Often no prior notice accompanies the issuance of a patent.[122] As a result, many patent instruments are only available for public inspection after they have been granted legal effect. In our fast-moving contemporary economy, business method patents can issue long after many merchants have adopted that commercial strategy. As a result, almost any business method patent has the potential to be a so-called "submarine patent," rising unexpectedly from the PTO and poised to torpedo established industries.

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[118] Melton, *supra* note 79.

[119] Ibid at 102.

[120] Thomas, *supra* note 20, at 1141.

[121] *See* Stross, Randall E., "Patently absurd claims," *U.S. News & World Report* (20 March 2000), 56.

[122] Traditionally, the PTO did not published pending applications. Under U.S. law, patents were traditionally published only at the time they were formally granted. The American Inventors Protection Act of 1999 altered this principle, calling for the publication of some pending patent applications eighteen months after they have been filed. However, if the patent applicant certifies that it will not seek corresponding patent rights abroad, then the PTO will not publish the application. These changes do not guarantee that industry participants will be provided with notice of the patent rights of others prior to that patent's issuance. U.S. Library of Congress, Congressional Research Service. *Patent Law Reform: An Analysis of the American Inventors Protection Act of 1999 and Its Effect on Small, Entrepreneurial Firms*, by John R. Thomas, Report RL30451,29 February 2000, 8-10.

Submarine patents remain a particular concern of the National Commission on Entrepreneurship, which believes that "some current intellectual property and patent procedures and regulations impede entrepreneurs seeking to create and commercialize new technologies."[123]

Although no firm conclusion about the impact of business method patents upon small business is possible at this time, most commentators agree that businesses of all sizes should be more attentive to the patent system. Attorney Mark Plotkin advises commercial enterprises to employ due diligence when embarking upon new ventures. Not only should the patentability of the enterprise's own business methods be assessed, enterprises should consider whether any proposed activities would infringe the patents of others.[124] Other observers have encouraged small businesses to perform an intellectual property audit. Such an audit allows businesses to identify intangible intellectual assets, confirm their ownership and assess their value.[125]

[123] Pages, Erik R., "Priorities for Federal Innovation Reform," National Commission on Entrepreneurship, available at http://www.ncoe.org//policy/ostp.html.

[124] Plotkin, Mark, "Mind Your Own Business Method: Innovators Must Help Themselves as PTO Issues Out Dot-Com Patents," *Legal Times* 23 (14 Feb. 2000), 31.

[125] Buff, Ernest D.& Restaino, Leslie Gladstone, "Using Intellectual Property Audits in Acquiring and Exploiting Technology," *New Jersey Law Journal* 155 (29 March 1999) 1361.