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### **Why Patenting Information Technology And Business Methods Is Not Sound Policy: Lessons From History And Prophecies For The Future.**

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As participants in an information society we not only depend upon receiving timely, tailored and accurate data we expect that improvements will be made to the quality and expediency of the information delivery in the future. The Internet infrastructure that fuels the transmission of data and has created a several billion-dollar e-commerce industry has developed at an unprecedented rate.<sup>[1]</sup> The Internet's success is attributed to the many entrepreneurs and innovators who have eagerly joined in its making. While Internet policy makers and stake holders agree that continued research and development of the mechanisms and processes to improve the network of networks is desirable, there is a polarity of opinion among experts regarding the appropriate treatment of information as intellectual property particularly when it is utilized or applied primarily in cyberspace.

A traditional view of intellectual property rights proposes that greater incentives to innovate are brought about by increasing or broadening the scope of protection that is provided by a patent or copyright grant. The United States Patent and Trademark Office (PTO) and the Court of Appeals for the Federal Circuit (CAFC)<sup>[2]</sup> are making new law by broadening the scope of patent protection to include Internet business methods.<sup>[3]</sup> The author believes that the current trend does not stimulate innovation but rather it rewards existing the monopoly rights holders which does not distribute wealth and opportunity but rather it strengthens the present structures of power.

The surge in the application for business method patents that can be applied on the Internet is significant.<sup>[4]</sup> This article begins with a review of the Amazon.com v Barnesandnoble.com Inc. <sup>[5]</sup> lawsuit which sets out the components of a business method which has been granted a patent by the PTO; the case also illustrates the varied and vested interests that have converged to draw the crucial boundary lines which presently define patentable subject matter. The 2001 decision of the CAFC to remand the District Court's preliminary injunction represents a major development in the Patent Court's understanding of the relationship of technology to patent law.

The patenting of software has become a common practice in the United States since the famous *In re Alappat* decision<sup>[6]</sup> in 1994. Part II sets out strong legal theory which invalidates the basis for the decisions that have lead to software patenting and draws upon the European practice as an appropriate model to follow. Part III examines the erosion of the business method exemption from patent law in American jurisprudence which has lead to the proliferation of patents on trivial processes. Once again, the author points to the European Patent Convention (EPC) as a preferable

approach. Limiting the scope of interests entitled to government sanctioned protection is consistent with the aim of the Framers of the Constitution. The Framers sought to limit the patent system to "useful arts" in order to avoid the English experience that led to the English Statute of Monopolies of 1623, which is the forbear of our patent legislation. Part IV reviews an economic model to explain the success of the Internet, which is an interactive and dynamic environment to suggest that the traditional view of intellectual property enforcement does not yield the expected gains in cyberspace. In concluding the author suggests that while the present patent system may not stifle the creation of good ideas it does not encourage new innovation but rather entrenches the monopoly rights of existing patented patent holders.

## Part I

Internet business method patent applications call upon two areas of patent law namely algorithms and business methods, neither of which falls within the statutory definition of patents as, defined under current patent law:

### **Inventions patentable.**

**Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter or any new and useful improvement thereof, may obtain patent therefor, subject to the conditions and requirements of this title.[7]**

This presents the challenge to decide where to draw the line to define patentable subject matter. Amazon.com received patent number 5,960,411 (the '411 patent) on September 28, 1999. The patent describes a "Method and System for Placing a Purchase Order Via a Communications Network"; it includes twenty-six claims. In essence, the patent allows a consumer who is using the Internet and viewing the Amazon.com site to make a purchase via the Internet using only a single action, such as a single click of a mouse once the information describing the item to be purchased is displayed on the screen. Amazon.com is one of the most popular online retail merchants that has become successful because of its efficient distribution of an enormous variety of merchandise. Jim Bezos the CEO of Amazon.com was picked as TIME magazine's man of the year in 1999 because of his entrepreneurial success as e-commerce pioneer.

Barnesandnoble.com[8]. is also an online retailer of similar merchandise, primarily books that used an ordering feature called "Express Lane" on its site. Amazon.com sued to enjoin Barnesandnoble.com from using its Express Lane feature alleging that it infringed on several claims of the '411 patent. The U.S. District Court for the Western District of Washington (Wash. Dis.Ct) granted Amazon.com's request for a preliminary injunction finding that the '411 patent was valid and that Express Lane was an infringing activity.

The Wash.Dis.Ct found that the '411 patent was valid because it was nonobvious and novel based upon both direct evidence and based upon an examination of prior art. [9] The Court compared the software technology of several similar programs with that of Amazon.com's '411 patent to find them sufficiently different so that none of the prior art anticipated the claims of '411.[10] The court relied on several business and technical experts for direct evidence of nonobviousness of the business method.[11] They acknowledged that they had never conceived of such an invention and testified that the one click would reduce consumer anxiety over issues of Internet security, thus maximizing consumer purchases.

A year and four months later the CAFC vacated the preliminary injunction finding that the Wash.Dis.Ct. failed to recognize the substantial question of invalidity asserted by Barnesandnoble.com in their prior art references.[12] The technical characteristics of the business method patent which Amazon.com claimed deserved patent protection was misread by the District Court; the difficulty in discerning the true nature of the invention goes to the very heart of the

validity of the e-commerce patents which have been proliferating. Barnesandnoble.com had described in its evidence a service offered by CompuServe that used a "single action ordering technology" that Amazon.com had claimed was unique to its one click method. The CompuServe system was not a World Wide Web (the Web) application and thus the Wash.Dis.Ct. dismissed this as prior art. Finding that the single action ordering techniques can be used in various environments other than the Internet and that the medium in which an application is expressed does not control an invention's originality the CAFC vacated the injunction. The CAFC's comparison of the CompuServe system and Amazon.com's one click method reflects an important enlightening by the judicial branch. It appears that the courts are coming to recognize that patents can not be granted on well known business practices simply because they are represented in technology that works on the Internet.

Soon after the preliminary injunction was granted in October 1999 in the initial Amazon.com case a discussion of the propriety of granting patents to business method software was aired in public on the Web. Tim O'Reilly an ardent Internet innovator started a crusade to criticize and ridicule software business method patents as "land grabs" and as a means to "hoodwink a patent system" that hasn't gotten up to speed with technology.[13] In an *Open Letter on the Subject of Patents*[14] which was published on the Amazon.com site Jim Bezos thanked Tim O'Reilly for exposing the patent dilemma and Bezos made several recommendations for patent system reform. Both Bezos and O'Reilly recognize the need for better access to more "prior art"[15] and they joined with several other investors to establish BountyQuest[16] which is an online company that offers rewards to anyone who can find prior art on specified proposed or existing patents. BountyQuest has awarded four \$10,000 awards to individuals who located prior art on matters, which included online music sampling and single chip network routers.

## Part II

The Wall of Jericho holding back patents on software has certainly been breached; this can be seen in software-related patent infringement cases that do not even mention section 101 as an issue[17] This should not justify using the software to qualify a patent on a business method. Courts have not mastered this distinction in order to ascertain the invention in the business method as separate from the underlying software. Where must the "useful art" be found? A patent should not be granted merely based upon the underlying algorithm by which the business method is processed. The business method itself must be patentable subject matter especially because the basis for finding software patentable is not well grounded in Constitutional legal theory.

One must begin an evaluation of the legitimacy of granting patents on software under the United States patent system by looking at the language and legislative history of the Constitution and the succeeding case law. Article I Section 8 of the Constitution grants Congress the power to make laws, "To promote the Progress of Science and useful Arts, by securing for limited Times to... Inventors the exclusive Rights to their ... Discoveries". This language was drafted by men who experienced or were aware of the tyrannies of government sanctioned monopolies that were so prominent in England. The English Crown, the very government that they had fled from would "grant exclusive rights to engage in ordinary business activities"[18] which lead to the Statute of Monopolies, which proscribed grants of any letters patent except on "new manufactures."

A fundamental principle of patent law is that while a scientific truth, or the mathematical expression of it, is not a patentable invention, a novel and useful structure created with the aid of knowledge of scientific truth maybe.[19] . The well known inventor Samuel Morse filed eight patents on telegraph related devices; seven patents were granted but the eighth patent which was on the abstract concept of using electromagnetism to produce characters at a distance was denied. To grant a patent would have eliminated competition and hindered the progress of science.

In The Rubber-Tip Pencil Case[20] the court found the combination of a pencil and a rubber eraser

fitted into the top of the pencil to be an implementation of an idea that was so simple that the idea and the embodiment merged. The Court denied the patent stating that "an idea of itself is not patentable, but a new device by which it may be made practically useful is"[21] and thus stating that this patent failed to meet the necessary requirements.

The Patent Act which dates back to 1790 enumerated the "useful arts" with the following terms "any new or useful art machine, manufacture, or process of nature". It is true that at the time of the writing of the Constitution everyone knew that patents were to protect manufactures and machines,[22] and while such a narrow interpretation of the Constitution would rob it of the flexibility, certain sentiments should endure. The current legislation is the result of amendments made in 1952 which extends patentable "useful arts" to include "any new and useful process, machine, manufacture or composition of matter." [23] The statute is somewhat redundant in clarifying the term "process" by stating that it means "process art or method." [24] The Supreme Court has elaborated the definition of process broadly over the years. It is noteworthy that the patent law amendments of 1952, which moved the standard away from a scientific or industrial orientation to expand the scope of patent protection to "anything under the sun", [25] was drafted by a congressional commission lead by Giles S. Rich; he is the same man that served as the judge on the CAFC in the State Street case.

In order to curb the expansive grasp of proprietization of patent the PTO and the Courts began to rely on the presence of a physical tangible facility to determine the patentability of processes. Such identifiable boundaries reflected the principles of copyright law which offers protection only to works that are "fixed in a tangible medium of expression." The physicality standard did not help to separate the abstract concept from the practical application or useful process when the courts were presented with the question of computer software patentability. The Supreme Court entered the debate when it reviewed a method of converting numerals from binary coded decimal to pure binary format. [26] The steps of the method were mathematical operations that shifted bits to express particular numbers. The Court determined that the underlying idea was the software program's algorithm, which involved no practical application except in connection with a digital computer. Although the Court tried to use the "transformation to a different thing" analysis it was inapplicable and in the end the Court found that to grant the patent would be tantamount to a monopoly on a scientific truth.

The Benson case has come to represent the position that only purely mathematical algorithms are not patentable and that all others are. This paved the way for software patents. The PTO and subsequently the courts proceeded to reject any attempt "to patent mathematical algorithm rather than a process for producing a product." [27] An algorithm is a step by step procedure for solving a problem and there is no defensible boundary that separates mathematical from non mathematical algorithms. [28] The fact that an algorithm may produce a useful result versus remaining an unresolved abstraction does not change its inherent algorithmic structure. Algorithms are similar to the laws of physics, immutable truths of nature and not subject to patent. This was proven by the fact that equations can show that there is a certain class of problems that algorithms will never be to solve. [29] Therefore the courts preoccupation with only mathematical algorithms as non-patentable subject matter misdirected the Supreme Court away from the truer understanding of algorithms as timeless subjects.

It may be the strength of the computer technology industry and its significance to the U.S. economy, but whatever the reason, it is clear that there was a weakening of the PTO to loosen the restraints on software patenting. The *Diamond v Diehr* [30] case where the Supreme Court reversed the PTO's denial of the Diehr application for a process patent for operating a rubber molding press with the aid of a digital computer may have been the turning point in software patent history in the United States. The computer monitored the temperature using the Arrhenius equation but when the calculated time for the rubber to cure elapsed the device would open. The Court found that while the math equation was used the petitioner was not going to pre-empt the use of the equation and physical steps were part of the process. Applicants for patents soon learned that patents needed to be artfully

drafted in order to claim mathematical equations along side a physical manifestation.

Shortly following the Diehr decision and in response to several software cases the CAFC formulated a new standard for patentability that has become known as the Freeman-Walter-Abele test:

**It is first determined whether a mathematical algorithm is recited directly or indirectly in the claim. If so, it is next determined whether the claimed invention as a whole is no more than the algorithm itself; that is, whether the claim is directed to a mathematical algorithm that is not applied to or limited by physical elements or process steps. Such claims are nonstatutory. However, when the mathematical algorithm is applied in one or more steps of an otherwise statutory process claim, or one or more elements of an otherwise apparatus claim the requirements of section 101 are met.**[31]

This test reflected the permissive tenor of the PTO and the courts. By the time the Supreme Court reviewed *In re Alappat*[32] the tangible construct upon which patentability hinged was the combination of the computer and the software driven electrical signals employed to construct it. Alappat's invention computed various mathematical equations to convert "vector list data" into "pixel illumination intensity data"[33]. The Court found that the claimed invention as a whole was not a disembodied mathematical concept, which may be characterized as an "abstract idea," but rather a specific machine to produce a useful, concrete, and tangible result. The lynchpin of the Alappat Court's decision to grant a monopoly control on the use of the machine and the underlying algorithm was finding that it produced a "useful, concrete, and tangible result." [34] The Court in *Benson* found that the invention was just a "certain type of mathematical subject matter...representing nothing more than an abstract idea" certainly not entitled to patent protection. [35] The applicant in *Benson* might have been able to circumvent the Supreme Court's objections by naming a practical application to complement the algorithm as was done in *In re Alappat*.

*State Street Bank & Trust, Co. v Signature Financial Group, Inc (State Street)*[36] is important and even famous because of its impact on the business method exception, but *State Street* solidified the demise of the mathematical algorithm exception as well. At issue in *State Street* was Signature Financial Group's patent "Data Processing System for Hub and Spoke Financial Service's Configuration" which described an accounting system designed to facilitate the process by which mutual funds pooled their assets in investment portfolios. The system was known as the Hub, because the investment portfolio was formed as a partnership and Spoke because of each mutual fund that was a member of the partnership model; the system allowed for the consolidation of the costs of administering the funds combined with tax advantages. The District Court found that the Hub and Spoke system to be one of calculating numbers which involved no physical transformation and thus not patentable. Drawing upon the holding of *Alappat* that a programmed machine is patentable if it produces a "useful, concrete and tangible result" the Signature CAFC was satisfied that the process was statutory subject matter" even if the result is expressed in numbers, such as price, profit, percentage, cost or loss." [37]

The argument has thus far been made that the PTO and the courts have often granted patents on abstract ideas rather than on the expression of the idea when granting patents on computer software. Another ground to question the validity of the software patents that have been granted since 1994 is the apparent rejection of a scientific backdrop to the term "useful art". Many U.S. courts have employed the term technology to give modern meaning to the Constitutional term "useful art"; [38] similarly the term "industrial art" is often coined in Europe. As a central concept of modern life defining technology has attracted a justifiable amount of concern and commentary and while no precise taxonomy of technological characteristics exists a sense of the term has developed. Technology suggests that the subject matter would somehow use science or engineering to improve the human condition or create human efficiency in some way. It is not enough, that an article is new and useful, patents serve a higher end--the advancement of science. [39]

This is not the view of patentable subject matter embraced in State Street; rather State Street concludes that the term technology is any activity that requires rational human action to achieve a result that can be considered changing any aspect of human life. The method must be communicated or expressed in a manner to accomplish the stated objective.[40] State Street's liberal interpretation of the "transformation of information" as being a sufficient process to turn an idea into a useful process is inconsistent with logic and disregards the well reasoned opinions that lead to the Freeman, Walker Abele standard. The vacuous nature of the State Street standard is starkly seen in the dissenting opinion of Judge Newman four years earlier.[41]

A comparison of U.S. with European patent law highlights how far U.S. patent law has deviated from the original meaning of "useful art". A patent may be obtained in one of two ways in one of the member countries of the European Union, either it may be secured through the home country's patent office or through the European Patent Office (EPO) which administers applications under the European Patent Convention (EPC). A single application that can be filed with the EPO, if allowed, will grant a bundle of national patents in the contracting countries that have been selected by the applicant.

An invention is patentable under the EPC if it is new, involves an inventive step and is capable of industrial application. The defining characteristic of patentability is the technical character of the invention. Article 52 of the EPC contains a nonexhaustive list of non-patentable subject matter which are too abstract for protection, the list includes natural discoveries, scientific theories and most pertinent for our purposes, mental act or doing business and programs for a computer "as such". [42] The presence in the EPC of these words has led to the widespread belief that computer program related inventions are not patentable.[43]

Under the EPC it is clear that computer programs are not patentable as such but the Technical Board of Appeal of the EPO (the Board) has tested the meaning or application of this qualification in several cases. The Board has construed the "as such" exclusion to mean that computer programs lacking in technical character are abstract creations and not entitled to patent protection. In a "practice note" on the "patentability of programs for computers" the EPO states that;

**Programs for computers are considered as having technical character, if they cause, when run on a computer, a technical effect which may be known in the art but must go beyond the "normal" physical interactions between program and computer.[44]**

Patents have been used to protect a program that manages an industrial processor controls the operation of specialized machinery so long as there is a technical contribution.[45]

### Part III

Changes in intellectual property law do not usually attract much public attention yet the judicial decision of State Street, which conclusively eliminated the business method exception brought about a change that was tantamount to a revolution. Although Judge Rich speaks cursorily about his decision to disregard any statutory exemption for business methods thereby putting the ill conceived exemption to rest there is an established and well reasoned legal history to support the position that business methods are abstract ideas barred from statutory subject matter. In addition, the recent amendments to the U.S. patent laws suggest that the American public was, at a minimum, unprepared for removal of the business method exemption.

The doctrinal confusion about the validity of business method claims rests upon whether they are to be rejected, per se, because they are not qualified subject matter under Section 101 or whether they lack novelty and nonobviousness under Section 102.[46] Nineteenth century courts found that it was "contrary to the spirit of the law... to grant patents for book keeping" and that "a method for transacting common business " was unpatentable.[47] The original bias towards a scientific

orientation persisted through the turn of the century and the Second Circuit decision in *Hotel Security Checking v Lorraine Co. (Hotel Security)*[48] established the proscription on patents for business methods in treatises for the next ninety years.

At issue in *Hotel Security* was a "method and means for cash-registering and account-checking" designed to prevent fraud by restaurant employees. The opinion rests on several grounds including; that a means for cash-registering and account-checking was merely an abstract idea, the patentee's system may require ingenuity and be more convenient, but it adds nothing of substance to the art, a system of transacting business disconnected from the means of carrying out the system is not art, lack of novelty and invention, invalid for lack of patentability.

In issuing a standard for patentability the PTO codified a broad interpretation of *Hotel Security* in its Manual of Patent Examining Procedure (Guidelines). The Guidelines instruct that "though seemingly within the category of process or method, a method of doing business can be rejected as not being within the statutory classes".[49] The 1996 Guidelines eliminated this exclusionary language.[50] As a result of this provision very few business method patent applications were filed between 1908 and 1994.

The categorization of business methods as patentable subject matter was in fact a change that took place in patent regulation and case law in the United States during the 1990s. At the same time the PTO and the courts began interpreting the obviousness and novelty standard in a lenient or lax manner.[51] The *Priceline.com* patent is a good example of the loose application of the nonobvious requirement in the Internet context. Although reverse Dutch Auctions have existed for centuries the PTO did not find that *Priceline.com*'s use of the Dutch Auction on the Internet was obvious.[52] The issuance of this patent implies that it would not be "obvious" for a firm to take any standard business practice and apply it to the Internet using software technology.

The surge in the number of business method patents applied for and granted lead to Congress' enactment of certain provisions of the American Inventors Protection Act of 1999 (AIPA). The AIPA, which brings sweeping changes to the U.S. patent law, was designed to harmonize U.S. patent laws with those of Europe and other major trading partners. The AIPA is divided into eight subtitles and is incorporated into the larger Intellectual Property and Communications Omnibus Reform Act of 1999[53] which includes other Internet specific intellectual property rights provisions like the "anti cybersquatting act". Subtitle C entitled "First Inventor Defense" grants limited prior use rights based on earlier business method inventions. In essence the Subtitle provides that it should be a defense to an action for infringement if the alleged infringer can show that he "reduced the method of doing or conducting" business to a commercial practice for at least one year prior to the effective filing date of the patent. This relief is targeted to those companies that would have been prevented from getting patents on their business methods prior to 1996, and certainly 1998, thereby leveling the playing field that has changed since *State Street*.

There is a subjective element in any court's decision making. The average person is still amazed and intrigued by the capabilities of computers. Most judges are unfamiliar with inventions that contain software. The unfamiliarity generates a kind of "gee whiz" factor[54], which suggests novelty or invention thus validating what might otherwise be a mundane business method. Therefore it is very clear how precariously the business method patents are situated if the grounds for inventiveness is the software. If software is not a legitimate "useful art"[55] we are placing one faulty construct upon another.

The treatment of Internet business methods under patent law under the EPC reflects the same considerations for technical contribution that were discussed above.[56] While the EPC explicitly bans the patentability of business methods case law suggests that the technical effect of the method as a whole has played a role in the development of business method patent policy.[57] While the EPO Appeals Board will not invalidate an invention simply because it is a business method it allows the

technical features of the invention to control its patentability.

## Part IV

The defenders of patents for Internet business methods argue that intellectual property protection is needed for economic advancement. Studies of the relationships between patent grants, patent law changes and research and development are numerous[58],[1] <http://eon.law.harvard.edu/property00/patents/main.html>(visite[d] but certain common themes and facts emerge. Research and development spending across all industries has increased over the past decade and this was reflected in an increase in patent granting. In the software industry patents granted per software dollar were increasing at a faster rate than the overall economy but research and development expenditure adjusted for inflation decreased. [59]This suggests that incentives other than the monopoly rights attendant to patents lead development in the software industry and on the Internet.

Computer program related industries are examples where incremental development occurs and the creative activity of the Internet follows an interactive model. Innovation is sequential where each creator improves on the work of the previous product; where sharing of ideas produces the final product.[60] For example, software concepts like hypertext and multimedia that were initially conceived in the 1960's were subjected to sequential improvement by numerous people prior to achieving widespread commercial adoption. The World Wide Web is known as a hotbed of creativity which allows individuals to publish or offer their works for others to improve. Society has thus far benefited from the weak intellectual property rights enforcement and protection in the Internet environment.

The traditional intellectual property model is based upon the premise that there are high costs associated with developing creative works and in order to encourage inventors to engage in this activity they must be able to recoup their costs, hence the government granted limited right to prohibit others from gaining from your invention. Under this theory granting the inventor the exclusive right to profit from the invention will encourage invention, thus tighter protection will necessarily promote greater invention and increased social welfare. Under the Internet model, innovation is sequential and imitation improves the quality of the product or process therefore broadening the scope of protections is not conducive to innovation in cyberspace. While this article has highlighted several legal theories to explain why patent protection is not justified for certain software and business methods, granting exclusive rights to these inventors would not promote greater creativity in the current Internet age because the incentive structure has changed from earlier times.

Patents are not the preferred economic incentive mechanism for small firms, which typify the majority of online businesses because they do not have the resources to engage in patent prosecution. Rather, trade secret is a viable means to stay competitive. In addition the "head start" advantage which refers to the financial return an inventor enjoys as the result of being the first to invent leads to success in cyberspace.. The inventor may enjoy the economic advantage over the period of time that it takes competitors to develop methods to compete. This advantage is increased if the inventor has a promotional or marketing advantage. This combination of "being first " combined with some marketing presence has lead to significant advantages for online businesses because consumers get confused by the sheer number of entrants and therefore stick with the first firm to enter the market.

## Conclusion

One must go beyond the feeling of dissonance that is created when a legal concept such as patent is improperly used to define a creation such as a business method. Whether it is because algorithms are abstractions or universal truths which belong in the public domain or because business methods are simply too trivial for patenting we must ask what are the costs of following the State Street

precedent? Innovations and inventors will continue to create regardless of the legal structures around them. The concern is not that innovation will cease, but the misuse of patents does have negative effects which does necessitate rethinking the current trend to stop broadening the scope of patent rights.

Entry into the software market is already prohibitively expensive for the average size firm that does not already have a significant patent portfolio to cross license with other companies.[61] A recent study has shown that if you wanted to enter the microprocessor field and you didn't have your own patents it would cost about \$150 million just to get started.[62] Alternatively the cost to prosecute a patent is \$25,000 which is a significant barrier to the computer genius who pieced together in his garage many of the inventions upon which the Internet is founded. The high start up costs that are needed to get these "new" businesses off the ground has lead to a new industry of "licensing shops". Walker Digital is a prime example of these business entities whose sole purpose is to engage in the business of thinking of ideas that can produce patents.[63]

There has been a seventy percent increase in the number of business method patent applications at the PTO since 1998 with the number of legal challenges increasing at a similar pace.[64] This litigation is changing the environment of the Internet from a friendly community to an adversarial battleground. In fact some companies are now obtaining patents as "defensive use tactics" against potential litigants.[65] Fearful that their competitors will be obtaining patents on similar products or processes many firms obtain patents to stake out their territory even if they do not intend to license the patent.

Patents have become an important financing tool where by some firms actually maintain a patent registry. Financiers and venture capitalists in particular look at a company's patent portfolio as evidence of a positive investment opportunity. Patents are often used as a yardstick to measure a company's intrinsic value.

The structure or nature of the Internet and the technological society of the twenty- first century is built on different economic incentives than those of the Framers of the Constitution. The economic incentives which inspired the establishment of the intellectual property rights may not be necessary to keep new ideas flowing in the information age but we still need not stay true to the spirit in which they were conceived, namely that they serve as "encouragements to...ingenious discoveries." [66] Patents grant a valuable bundle of rights and advantages which must be bestowed in an intellectually honest manner and although the purposes and incentives for which the intellectual property clause was established may have evolved the fear of perpetuating economic power in the hands of a few through the grants of government sanctioned monopolies remains strong. The problem with the current trend to broaden the scope of patent laws is that it gives more control to those firms that already have a claim to one or more patents. This practice will strengthen those monopolies that are already entrenched with power. We must look to the European model and follow the traditional judicial interpretations of software and business methods to preserve the entrepreneurial spirit of America.

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[1] The incredible success of Internet companies has turned around in the past several months. *see 3.6 Trillion Dollars -Gone* in Providence Journal 3/9/01.

[2] In 1982 Congress passed the Federal Courts Improvements Act to standardize patent law across the country. To implement its objective Congress established the Court of Appeals for the Federal Circuit (CAFC) to have exclusive jurisdiction over appeals form the many district courts. See generally Adam Jaffee *The U.S. Patent System in Transition: Policy Innovation and the Innovation Process* <http://www.nber.org/papers/w7280>.

[3] **State Street Bank & Trust Co. v. Signature Financial Group, Inc.**, 149 F.3d 1368 (Fed.Cir

1998), See generally 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 Spring 1999 for a review of the significance of the changes in the courts approach to patent law in the United States. For a perspective on the impact of State Street internationally as well as domestically see Ann Marie Rizzo, *The Aftermath of State Street Trust v Signature Financial Group: Effects of United Electronic Commerce Business Method Patentability on International Legal and Economic Systems*, 50 DePaul L. Rev. 313, Fall, 2000.

[4] See Rizzo, *supra* note 3.

[5] 73 F. Supp. 2d 1228 (W. Dis. Wash. 1999).

[6] 33 F. 3d 1526 (Fed. Cir 1994).

[7] 35 U.S.C. 101.

[8] Technically there were two named defendants Barnesandnoble.com Inc and Barnesandnoble.com LLC but they are referred to during the proceedings jointly as Barnesandnoble.com.

[9] Rules and Regulations of the Department of Commerce, promulgated by the PTO, in 37 C.F.R. 1.56 often referred to as "Rule 56" imposes a duty on the applicant to disclose information about prior art. See generally Scott D. Anderson, *Inequitable Conduct: Persistent Problems and Recommended Resolutions*, 82 Marq. L. Rev 845, Summer 1999.

[10] A major criticism of that has been made of the present PTO is that there is not sufficient prior art available for searching. For suggestions to remedy this and other PTO deficiencies see Robert P. Merges, *As Many as Six Impossible Patents Before Breakfast: Property Rights for Business Concepts and Patent System Reform* 14 Berkeley Tech. L.J. 577, Spring, 1999.

[11] 73 F. Supp. 2d 1228, 1237.

[12] CAFC Feb 14, 2001.

[13] William C. Smith. *Patent This*, ABA Law Journal, March 2001.

[14] <http://www.amazon.com/exec/obidos.../patents.html/104-8432658-987159> (visited December 6 2000)

[15] The author suggests that the patent problem is more fundamental than merely incomplete prior art resources, see *infra* Part I.

[16] <http://www.bountyquest.com>.

[17] See Robert P. Merges *As Many as Six Impossible Patents Before Breakfast: Property Rights for Business Concepts and Patent System Reform* 14 Berkeley Tech. L.J. 577, Spring, 1999, for a discussion of **Enpat, Inc. v. Microsoft, Inc.**, 26 F Supp. 2d 806 (E.D. Va. 1998).

[18] John R. Thomas, *The Post-Industrial Patent System*, 10 Fordham I.P., Media & Ent. L.J. 3, fn. 170

[19] 306 U.S. 86, 94 (1939).

[20] 87 U.S. (20Wall) 498 (1874).

[21] Id.

[22] See Merges *supra* note 17.

[23] 35U.S.C. 101.

[24] 35 U.S.C. 100b.

[25] **Diamond v. Diehr**, 450 U.S. 175,182 (1981) (quoting S.Rep.1979,82d Cong., 2d Sess.5(1952).

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

[27] **In re Meyer**, 688 F.2d 789, (CCPA1982).

[28] Turing's equations as cited by Bryan Pfaffenberger, *Internet Patents: Giving Away the Store*, <http://www2.linuxjournal.com/articles/currents/014.html> (visited March 9, 2000).

[29] Id.

[30] 450 U.S. 175 (1981).

[31] **Arrhythmia Research Technology, Inc v Corazonix Corp.**, 958 F.2d 1053, 1058 (Fed.Cir 1992).

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

[33] 33 F.3d at 1537-39.

[34] Id at 1544.

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

[36] 149 F.3d 1368 (Fed.Cir.1998).

[37] Id at 1373.

[38] Thomas *supra* note 18 at ftn 177.

[39] **Great Atlantic and Pacific Tea Co. v Supermarket Corp.**, 340 U.S. 147 (1950).

[40] See generally Thomas *supra* note 18.

[41] "All mathematical algorithms transform data, and thus serve a process to convert initial conditions or inputs into outputs...and are a useful process", **In re Schrader**, 22 F.3d 290, 297(Fed. Cir. 1994) Newman, J. dissenting).

[42] See Article 52 (2)(c) and Article 55 of EPC, Convention on the Grant of European Patents (European Patent Convention)October 1973.

[43] Study Contract ETD/99/B5-3000/E/106:**The Economic Impact of Patentability of Computer Programs**, Report to the European Commission on behalf of the Intellectual Property Institute

[44] Id at 14.

[45] Michal Likhovski, Principal Author, Oxford Intellectual Property Research Centre, **The First Mover Monopoly**, ftn 120, <http://www.oiprc.ox.ac.uk>(visited March,9,2001).

[46] 35 U.S.C. 101, 35 U.S.C. 102.

[47] Thomas *supra* note 18 at ftn 42.

[48] 167 F.460 (2<sup>nd</sup> Cir. 1908).

[49] MPEP706.03(a) (1994).

[50] 61 Fed Reg. 7478,7479 (1996), see also Sari Gabay, *The Patentability of Electronic Commerce Business Systems in the Aftermath of State Street Bank & Trust Co. Signature Financial Group,Inc.*, 8J.L.& Pol'y 179 (1999).

[51] Jared Earl Grusd, *Internet Business Methods: What Role Does and Should Patent Law Play?*, 4. Va. J.L. &Tech.9 (1999).

[52] Id.

[53] The text of the Act is incorporated by reference in Division B of the House Conference report (H.Rpt.106-479. For a thorough over of the act see *The Rules Change Again: The American Inventors Protection Act of 1999*, Intellectual Property Today, June 2000.

[54] Rochelle Cooper Dreyfuss, *Are Business Method Patents Bad for Business?*, 16 Computer & High Tech.L.J. 263, May2000.

[55] See *supra* Part I.

[56] See *supra* Part I.

[57] Ann Marie Rizzo, *The Aftermath of State Street Bank & Trust v. Signature Financial Group: Effects of United States Electronic Business Method Patentability on International Legal and Economic Systems*, 50 DePaul L.Rev. 313, Fall 2000.

[58] *Report on Comparative Study Carried Out Under Trilateral Project B3b Business Method Related Invention* conducted by the European Patent Office, the Japanese Patent Office and the United States Patent Office; *Stronger Protection or Technological Revolution: Samuel Kortum and Josh Lerner What is Behind the Recent Surge in Patenting*, National Bureau of Economic Research, Working Paper 6204, <http://www.nber.org/papers/w6204>[ Julie Cohen and Mark Lemley, ] *Patent Scope and Innovation in the Software Industry*, Cali L Rev , Josh Lerner, *Where Does State Street Lead? A First Look at Finance Patents, 1971-2000*, [ March 9,2001; ] *The U.S. Patent System in Transition: Policy Innovation and the Innovation Process*, National Bureau of Economic Research, Working Paper 7280. <http://www.nber.org/papers/w7280>.

[59] Mark A. Lemley, *Reconceiving Patents in the Age of Venture Capital*, 4 J.Small & Emerging Bus.L. 137, Spring 2000.

[60] James Bessen and Eric Maskin, *Sequential Innovation, Patents and Imitation*, Working Paper MIT.

[61] Mark Lemley, *Reconceiving Patents in the Age of Venture Capital*, 4 J.Small & Emerging Bus.L. 137, (Spring2000).

[62] Id at 141.

[63] Walker Digital received a lot of criticism for its business practices and has recently experienced financial difficulties.

[64] Rizzo *supra* note 3.

[65] Lemley *supra* note 61.

[66] Letter from James Madison to Thomas Jefferson (Oct.17, 1788), in 14 THE PAPERS OF THOMAS JEFFERSON, 1788-1789,at 17 (Julian P. Boyd ed., 1956).