Note from the Chair

The Computer Law Section held its annual Spring Networking event at the Hard Rock Café in Detroit on May 19. We had a very nice turnout, despite a little rain! We enjoyed Happy Hour together and a presentation regarding the CAN SPAM Act by Dante Benedittini of Berry Moorman. Thank you to Dante, and also to Kim Paulson and Anthony Targan of our Council for working on the event. It is always nice to have a little extra time to talk to one’s colleagues about current issues and where our practices have led us.

We also held a brief Council meeting beforehand and took Committee reports. Notable among them is the imminent release of the Computer Law Section Survey, and our annual meeting and golf outing slated for September 30. We are offering a prize for completing the survey and will appreciate your feedback on Section activities. Thank you to Anthony Targan and Donald Crawford for their work on the Survey.

Also of note is the upcoming vacancy of 5 Council seats. We will hold elections on September 30. Please let me know if you would like to be added to our slate of Council members, or would otherwise like to become involved in our Section organization, perhaps by helping out with one of our committees. Contact me at: Sandy@TechnologyArbitration.com, or tekadr@hotmail.com.

We hope to see you at our annual meeting. Meanwhile, enjoy the summer.

Sandra Franklin, Chairperson, Computer Law Section
This paper presents the view that the United States Patent and Trademark Office (PTO) has raised the bar for prosecuting software patents. The author believes that raising the patentability bar is a proper reaction by the PTO in light of recent events allowing overly broad and unpatentable subject matter software patents. Justification for this position is made by explaining that the PTO lacks experience in dealing with software patents; the public reaction when such patent is issued is typically negative; and events in Europe further pressure the PTO to limit what an individual may be able to claim in a software patent.

Section one outlines the rights an inventor has under the U.S. patent system. It points out that granting an individual a monopoly on an invention has specific policy justifications that further the interests of the public. Section two discusses the need to limit what an individual may be allowed to patent. Congress has stated that at least three criteria must be met before an individual is given monopoly rights to his invention: novelty, usefulness, and non-obviousness in regards to patentable statutory subject matter. An overview of statutory subject matter is provided. As statutory subject matter is broadened by the courts and Congress, computer programs begin to emerge as an important patentable subject area for many online and computer-based businesses. A discussion of the history of software patents in provided in Section three. Section four lays out how the PTO has responded to the changes in implementing software specific policies. Finally, an analysis of how the author reached the conclusion is provided for in Section five including: software blunders by the PTO and the European Union anti-software patent policies.

What is a Patent?

A patent for an invention is the grant of a property right to the inventor by the United States Constitution under Article I, Section 8, Clause 8 stating: The Congress shall have power… To promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries. The fundamental rightness and fairness of protecting the creations of inventors and the general sense that the patent system is capable of continuing to provide an incentive to research, development, and innovation has been argued as the basic worth of a patent system. The President’s Commission of the Patent system established in April of 1965 by President Lyndon B. Johnson stated the following reasons for not establishing any practical substitutes to the patent system:

“First, a patent system provides an incentive to invent by offering the possibility of reward to the inventor and to those who support him. This prospect encourages the expenditure of time and private risk capital in research and development efforts.”
“Second, and complementary to the first, a patent system stimulates the investment of additional capital needed for the further development and marketing of the invention. In return, the patent owner is given the right for a limited period, to exclude others from making, using, or selling the invented product or process.”

“Third, by affording protection, a patent system encourages early public disclosure of technological information, some of which might otherwise be kept secret. Early disclosure reduces the likelihood of duplication of effort by others and provides a basis for further advances in the technology involved.”

“Fourth, a patent system promotes the beneficial exchange of products, services, and technological information across national boundaries by providing protection for industrial property of foreign nationals.”

Generally, a new patent term lasts 20 years from the date the application was filed with the PTO and is effective only within the United States, U.S. territories, and U.S. possessions. The right conferred to the patent owner under the 1952 Patent Act is “the right to exclude others from making, using, offering for sale, or selling” the invention in the United States or its territories. Software patents are prosecuted and fall under the category of a utility patent. A utility patent may be granted to anyone who invents or discovers any new and useful process, machine, manufacture, composition of matter or material. Patent law is therefore based on quid pro quo: in exchange for the monopoly and all of its associated benefits, the patentee must fully disclose the specifics of the invention to society. Full disclosure of the invention of a new and useful product or more efficient process increases the knowledge base of society and promotes innovation. Patents, therefore, are the “price that society pays to encourage inventors to invent and then share their inventions with the public.”

**Patentable Subject Matter**

Patent protection is not automatically given to innovations that are useful, new and non-obvious but are available for certain classes of “statutory subject matter.” The first Patent Act enacted in 1790 defined “statutory subject matter” as “any useful art, manufacture, engine, machine or device or any improvement therein…” In the 1952 Patent Act, congress replaced the word “art” with the word “process” and a new era of patent protection followed. The relevant sections of the 1952 Patent Act relating to patentable subject matter read:

**35 U.S.C.A. § 100 – Definitions**
When used in this title unless the context otherwise indicates –
(a) The term “invention” means invention or discovery.
(b) The term “process” means process, art or method, and includes a new use of a known process, machine, manufacture, composition of matter or material.

**35 U.S.C.A. § 101 – Patentable Inventions**
Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefore, subject to the conditions and requirements of this title.

Virtually all mechanical, electrical and chemical inventions are considered “statutory subject matter” eligible for patent protection. The close questions the Court has yet to fully define are inventions relating to computer science and biotechnology. In addition, confusion may further exist regarding patentable subject matter because it varies widely depending on the country. For instance, the European Patent Convention (EPC) provides:

**Article 52 – Patentable Inventions**
(1) European patents shall be granted for any inventions which are susceptible of industrial application, which are new and which involved an inventive step.
(2) The following in particular shall not be regarded as inventions within the meaning of paragraph 1:
   a. discoveries, scientific theories and mathematical methods;
   b. aesthetic creations;
   c. schemes, rules and methods for performing
mental acts, playing games or doing business, and programs for computers (emphasis added);
d. presentations of information

(3) The provisions of paragraph 2 shall exclude the patentability of the subject-matter or activities referred to in that provision only to the extent to which a European patent application or European patent relates to such subject-matter or activities as such.

Article 53 – Exceptions to Patentability

European patents shall not be granted in respect of:

(a) inventions the publication or exploitation of which would be contrary to “ordre public” or morality, provided that the exploitation shall not be deemed to be so contrary merely because it is prohibited by law or regulation in come or all the Contracting States;

Under the EPC, the scope of patent protection for computer science innovations is complicated and largely unsettled due to disputed policy issues that will be discussed in more detail later in this paper.

Finally, business methods, which many current computer science inventions relating to the Internet are based, have not been patentable because they fall under the general premise that abstract ideas or theories are not patentable subject matter. A judicially created doctrine of this attitude was the so-called “business method exception” to patentable subject matter. This judicially created exception stated that “no mere abstraction, no idea, however brilliant can be the subject of a patent irrespective of the means designed to give it effect.” Thus, even if a new business process or operation yielded a new substance, only the resultant substance and not the process was deemed patentable subject matter under the exception. This policy has also been a topic of recent litigation and still continues to be a hot topic of debate.

Background of Software Patents

As early as 1981, the courts and PTO would not uphold software patents or any patents that utilized a calculation made by a computer. Their rationale was that patents could only be granted to processes, machines, articles of manufacture, and compositions of matter as stated in the 1952 Patent Act. The PTO viewed computer programs and inventions containing or relating to computer programs as mathematical algorithms, and not processes or machines. This was very evident when process patents that even mentioned computerization were rejected by the examiner and Board of Appeals. In 1981, the U.S. Supreme Court decided Diamond v. Diehr to change this.

Diehr (Plaintiff) sued the patent examiner; Diamond (Defendant) for rejecting Diehr’s patent claiming a process for curing synthetic rubber. Diamond contended that the steps in Diehr’s claims constituted non-statutory subject matter under 35 U.S.C. § 101 because they were carried out by a computer under the control of a computer program. Diehr argued that while it was possible to calculate by means of an established mathematical equation when to open the molding press and remove the cured product, according to Diehr, the industry had not been able to measure precisely the temperature inside the press, thus making it difficult to make the necessary computations to determine the proper cure time. Diehr characterized this contribution to the art to reside in the process of constantly measuring the temperature inside the mold and feeding the temperature measurements into a computer that repeatedly recalculates the cure time by use of the mathematical equation and then signals a device to open the press at the proper time.

The question presented to the Diehr Court was: can an inventor patent a machine that transforms materials physically under the control of a programmed computer? In a 5-to-4 decision, the Supreme Court said yes and held that a machine which transforms materials physically under the control of a programmed computer is patentable. This holding did not overrule the earlier Gottschalk v. Benson decision holding that a mathematical procedure cannot be patented. The majority in Diehr said the Benson decision did not render all computer programs unpatrientable contrary to the dissenting opinion. Immediately following the Diehr ruling, software patent applications began flowing into the Patent Office. As recently as the early 1990s, The Court of Appeals for the Federal Circuit tried to clarify when a software invention was patentable dispelling concern that the courts may distinguish Diehr and change their minds on software patents.

In 1994, the Alappat court ruled that virtually all computer programs are patentable. This decision was pivotal in causing the PTO to revise the manner in which it examined applications for computer software. The court in Alappat also articulated what is not patentable. The court focused on the invention as a
whole, and sought to distinguish useful inventions from disembodied mathematical concepts, laws of nature or abstract ideas. The approach the court adopted was a major shift in emphasis from studying the claims, to studying the entire specification and trying to understand what the inventor really had invented in terms of novelty. The claims are still very important but the specification now carries much more weight and importance in determining the basic question of patentability under 35 U.S.C. §101. The court stated that if the invention is a mathematical algorithm, such as a computer program designed to convert binary-coded decimal number to binary number, then the invention is unpatentable. However, if the invention utilizes the computer to manipulate numbers that represent concrete, real world values, then the invention is a process relating to those real world concepts and is patentable.

In 1998, the United States Court of Appeals for the Federal Circuit, which has exclusive jurisdiction in patent related matters, took an additional step in creating patentable subject matter particularly for computer science inventors on the Internet by formally dissolving the business method exception in State Street Bank. State Street Bank involved a computerized business method that pooled mutual fund assets into an investment portfolio that was organized as a partnership for tax benefits. The case held that a financial business method that transforms data to produce a “useful, concrete and tangible result” is eligible for patent protection. More importantly, the Federal Circuit firmly held that the business method exception is an unwarranted limitation to statutory subject matter. The Federal Circuit cleared up the confusion and announced that Business Method Patents must be held to the same legal requirements for patentability as any other innovation. The broad language of State Street Bank and its progeny has lifted the business method exception for all types of business ventures. Although, the most dramatically affected area of invention has been the Internet-based business sector. The State Street Bank decision had such an enormous impact on business-related inventions on the Internet because it is there that methods of doing business have rapidly combined with emerging computer technology to fuel the emergence of e-commerce. As a result, controversy and highly critical articles have been sparked by the exploitation of patents by Internet companies. There is a fine line that companies need to walk when evaluating patentability of an invention that needs further examination and could be one of many reasons why the PTO has been overly critical during the prosecution of an Internet patent.

Current Software Patent Policy and Procedures

In 1996, the PTO adopted its Final Computer Related Examination Guidelines in an attempt to comply with the holding in Alappat and assist patent examiners in handling hardware and software related inventions. These guidelines assist the patent examiners specifically in determining whether an invention complies with the statutory requirements of a patent and is therefore patentable. Specifically, since software itself is not patentable, the guidelines help determine when software is framed as a process or machine, which is patentable. The new guidelines have stated that computer programs that have traditionally been held to be patentable will continue to be patentable without further analysis calling these “safe harbor” inventions. These two types of “safe harbors” include:

1) Inventions having “significant post solution activity”, where a software program is used to control something external to the software program;
2) Those having “pre-computer process activity”, where a software program manipulates numbers representing concrete, real world values.

An invention is additionally patentable if it is claimed in connection with a specific machine or product. Specific code segments or routines in the patent application can be defined or by claiming the software with a specific type of computer or memory structure. Thus, computer processes involving data corresponding to physical objects or activities external to the computer system and not merely dictated by the underlying algorithm or process, or data representative of such physical objects or activities, can render a process statutory because the underlying process will involve “specific” data unique to the practical application of the process.

Analysis

A patent system is supposed to provide an incentive to invent by offering the possibility of reward in the form of a monopoly. This process is supposed to encourage the expenditure of time and capital in research and development efforts. The PTO needs to be aware that there is a difference between rewarding an inventor for a truly novel, useful, and non-obvious invention and one that is merely disguised as one. A patent system fur-
the nation’s largest online bookseller, holds a patent on its “one-click” checkout feature.\textsuperscript{26} Amazon.com’s patented one-click system enables repeat online customers to place orders without re-entering credit card or address information. This streamlined online checkout feature is the Web analogue of the items arranged near the supermarket register designed to trigger impulse buying.\textsuperscript{27} Part of the patent covers the way Amazon stores billing and shipping data. Amazon sued BarnesandNoble.com alleging that the latter’s single-click Express Lane Web purchasing technique infringed on the former’s “one-click” checkout feature.\textsuperscript{28} In December 1999, Amazon obtained a preliminary court injunction against Barnesandnoble.com that prevented its competitor from using the one-click system. The District Court reasoned that “[e]ncouraging Amazon to continue to innovate—and forcing competitors to come up with their own ideas—unquestionably best serves the public interest.”\textsuperscript{29} This patent and the ruling created harsh criticism and prompted calls to boycott Amazon because of its attempts to “tax e-commerce through patents.”\textsuperscript{30} Amazon.com managed to get two very important sales seasons from Barnes and Noble by obtaining this injunction before the court held that BarnesandNoble.com mounted serious challenge, based on obviousness in light of prior art, to validity of patent claiming single action method and system for placing purchase order over Internet, precluding preliminary injunction.\textsuperscript{31} The patent and its enforcement drew such harsh criticisms and Amazon probably felt that it wouldn’t survive an appeal so the parties decided to settle the suit in March of 2002 in a confidential settlement agreement.

The Wall Street Journal stated that the Amazon lawsuit caused storms of protest from critics of “business method” patents, which skeptics deride as overly broad and unoriginal concepts that abuse the patent system and stifle innovation.\textsuperscript{32} One-click, in particular was seen by some as little more than a simple combination of existing Web technologies.\textsuperscript{33} Critics like Richard Stallman, a prominent advocate of open source software, even proposed that Web users boycott Amazon to discourage it from protecting its patent. “Patents such as yours are the first step in vitiating the Web, raising the barriers to entry not just for your competitor, but for the technological innovators who might otherwise come up with great new ideas that you could put to use in your own business,” wrote another critic in a letter to Amazon Chief Executive Jeff Bezos in January 2000.\textsuperscript{34}
Like the business method of the Amazon.com patent, Priceline.com received a patent for its “reverse auction” service: an e-commerce system that enables consumers to name their own price for a variety of goods and services.

In September 1996, Priceline filed its patent application and received a “business process” patent in August 1998 (US 5,794,207), protecting its “name your own price” for purchasing of goods and services through the Internet. Priceline said the patent covered its basic procedures of doing business: Consumers can name how much they’ll pay for a plane ticket on a specific day between two cities, and Priceline.com lets major airlines say whether they’ll sell the seat at that price—within an hour. But Thomas G. Woolston's MercExchange applied for its patent in November 1995. His patent, 5,845,265, states it is a way to allow bargaining after purchase of used or collectible goods by computer “in an electronic market.”

Like the Amazon.com patent, the Priceline.com patent has been highly criticized as neither novel nor non-obvious. The criticism has been centered on the issue of the PTO granting a ‘business method’ patent for a method that has been around for a long time… the Dutch auction. In fact, The U.S. Treasury sells hundreds of billions of dollars’ worth of securities each year using this method. But Thomas G. Woolston’s MercExchange applied for its patent in November 1995. His patent, 5,845,265, states it is a way to allow bargaining after purchase of used or collectible goods by computer “in an electronic market.”

The European Union and its Influence on The PTO

While the PTO struggles with policies and procedures for granting software patents, Europe deliberates if these patents will even be allowed. This further complicates and puts into question how the PTO will proceed with developing policies for examiners and prosecution procedures specifically relating to software patents. Will the examiners be further deterred from granting software patents or persuaded to raise the bar when examining software patents? How will the European Union stand on software patents affect the decisions of the PTO in granting software patents in the United States and under the Patent Cooperation Treaty (PCT), if at all? These questions will be further explored.

European Patent Convention (EPC) relating to the granting of the European patent protection was signed in Munich in 1973 within the scope of the European Economic Community. The purpose of the EPC is to make the protection of inventions in the Contracting States easier, cheaper, and more reliable by creating a single European procedure for the grant of patent on the basis of a uniform body of substantive patent law.

The EPC is also a regional patent treaty according to the appropriate Article of the Patent Cooperation Treaty (PCT). European patents can therefore be granted on the basis of an international application filed in accordance with the PCT. The PTO acts as a Receiving Office for international applications filed by nationals or residents of the United States.

In order to understand how the PTO will be influenced by the EPC, it is important to understand how the European Union (EU) will treat software patents. Under Article 52 of the EPC, “European patents shall be granted for any inventions which are susceptible of industrial application, which are new and which involve an inventive step.” An industrial application means that “the invention can be … used in any kind of industry…” Although, “schemes, rules and methods for performing mental acts, playing games or doing business, and programs for computers” are excluded by statute. Also excluded by clause 2 are “mathematical methods” and “presentation of information.” Article 52 further limits the exclusions of clause by stating that “the provision of clause 2 shall exclude patentability of subject matter or activities referred to in that provision only to the extent to which a European patent application or European patent related so such subject matter or activities as such.” This “as such” provision has been the topic of much litigation, specifically the court states that “technical character is an implicit requirement of the EPC…” The implicit “technical character” requirement arose from several sources that have been agreed to by the Technical Boards of Appeal:

- EPC: uses the term “technical”
- Guidelines for Examination: “the invention must be of technical character” (C-IV, 1.2)
- Case Law: IBM cases T-1173/97 and T-0935/97 before the Technical Boards of Appeal

So what does this mean for computer patents? This means that software patents under the EPC must
satisfy the “technical character” requirement, which the Board in Pension stated includes “an apparatus consisting a physical entity or concrete product suitable for performing or supporting an economic activity…” In Pension, the Board said that a non-technical claim may become patentable when claimed as an apparatus (“physical entity”).

So what if the software patent isn’t claimed with an apparatus? The Board stated that for a computer program claimed by itself, it must show that a “further technical effect” is caused by the computer program. The big question for examiners is what constitutes “further technical effect?”

- A “technical result”
- A “functional feature” or “technical feature”
- A “technical consideration” that is required to carry out the invention and is reflected in the claims

Although the EPO uses different semantics for “technical effect,” it appears that the purpose of the further technical effect is to allow patent protection for software claims that are limited to a particular technical application. Now to further complicate matters, legislation in the form of a Directive by the European Union has been proposed that would affect the patentability of computer-implemented inventions. Examples of the European Parliament proposed Amendments are:

Added to Article 4b: Member States shall ensure that computer implemented solutions to technical problems are not considered to be patentable inventions merely because they improve efficiency in the use of resources within the data processing system.

Deleted Article 3: Member States shall ensure that a computer-implemented invention is considered to belong to a field of technology. Added Article 3a: Member States shall ensure that data processing is not considered to be a field of technology within the meaning of patent law; and that innovations in the field of data processing are not considered to be inventions within the meaning of patent law.

Original Directive Article 2(b): “technical contribution” means a contribution to the state of the art in a technical field which is not obvious to a person skilled in the art. Amended Directive: “technical contribution”, also called “invention”, means a contribution to the state of the art in a technical field. The technical character of the contribution is one of the four requirements for patentability. Additionally, to deserve a patent, the technical contribution has to be new, non-obvious, and susceptible of industrial application. The use of natural forces to control physical effects beyond the digital representation of information belongs to a technical field. The processing, handling, and presentation of information do not belong to a technical field, even where technical devices are employed for such purposes.

The EPO leaves practitioners and examiners with a confusing “technical character” standard; the requirement for apparatus claims for software methods; a mandate to include “further technical effect” in claims; and the possibility that this standard will soon change for the patentability of computer-implemented inventions.

**Conclusion**

The PTO has raised the bar for prosecuting software patents. However, the author believes that raising the patentability bar is a proper reaction by the PTO in light of these recent events allowing overly broad and obvious software patents. Justification for this position has been made by pointing out that software patents like Amazon.com’s patented one-click system and Priceline.com’s “name your own price” method patents should have never been issued. The PTO lacks experience in dealing with software patents and the public reaction when such patents are issued is typically negative. In addition, events in Europe may further persuade the PTO and courts to further limit what an individual may be able to claim in a software patent.

Finally, since the PTO acts as a Receiving Office for international applications filed by nationals or residents of the United States under the PCT; it may be influenced by the limits placed on software patents in Europe when evaluating software patents in the United States.

It appears that the PTO probably should raise the bar for software patents filed in the United States so that overly broad and obvious software patents don’t get issued. The public interest; the fundamental rightness and fairness of protecting the creations of in-
ventors; and the general sense that the patent system should provide an incentive to research, development, and innovation demands that examiners be highly diligent before granting software patents.

Endnotes

5 Id. at 43.
6 Checking Co. v. Lorraine Co., 160 F. 467, 469 (2d Cir. 1908).
9 Id.
11 In re Alappat, 33 F.3d 1526, 31 USPQ2d 1545 (Fed. Cir. 1994).
12 Id.
13 Id.
14 State Street Bank & Trust Co. v. Signature Finance Group, Inc., 149 F.3d 1368, 1374 (Fed. Cir. 1998).
15 Id. at 1374.
16 Id. at 1373.
17 Id. at 1375.
18 Id.
21 Id.
23 Id.
24 Id.
25 Id.
26 Seth H. Ostrow, Is All This Skepticism Warranted, N.Y. L.J., Mar. 27, 2000, § 7.
29 Id.
30 Seth H. Ostrow, Is All This Skepticism Warranted, N.Y. L.J., Mar. 27, 2000, § 7.
31 Amazon.com, Inc. v. BarnesandNoble.com, Inc., 239 F.3d 1343, 1360–62 (Fed. Cir. 2001)
33 Id.
34 Id.
36 Id.
39 35 U.S.C. §361(a)
40 European Patent Convention – Article 52(a).
41 European Patent Convention – Article 57.
42 European Patent Convention – Article 52, Clause 2(c).
43 European Patent Convention – Article 52, Clause 2(c).
44 European Patent Convention – Article 52, Clause 3.
48 European Patent Convention – Article 52(1).
49 IBM cases t-1173/97; T-0935/97: “a computer program claimed by itself is not excluded from patentability if the program … brings about … a technical effect which goes beyond the ‘normal’ physical interactions between the program (software) and the computer (hardware) …”
50 IBM T-0935/97 pg. 24, 9.7.
Mark Your Calendars

On Friday, September 30, 2005

the Computer Law Section will again hold its Annual Meeting and Golf Outing at the Links at Pinewood, in Walled Lake. You will hear more about this event as the time draws near, but make certain that you have it marked down and penciled in red.

Also, this is the time of year when we are looking for volunteers who may wish to run for Section Council or as a Section Officer. If you are interested in becoming a Council Member, or an Officer, please contact me at Sandy@TechnologyArbitration.com, or tekadr@hotmail.com.