Protection of Computer Programs

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(c. 1988)

Patent, copyright and trade secret laws can be used to protect computer programs. These laws provide legal remedies to compensate computer software developers and to stop competitors from using the developers' work product without paying for it. Briefly, patent rights enable the developer to stop other people from making, using or selling the computer program as long as the competitor's program includes all essential elements in at least one claim of the patent. The copyright law provides for injunctive relief and compensatory damages against a competitor, if the competitor's product is substantially similar to the copyrighted program and if the competitor had access to the program, that is, had access to human readable source code, flow charts, machine code or other information generated during the development of the computer program. Patent and copyright laws are federal statutes. Therefore, enforcement of these intellectual property rights is only available through the federal court system (U.S. District Courts and federal appeal courts).(1) Trade secret law enables the computer developer to contract or enter into written agreements with individuals and other companies and requires that they maintain the computer program information materials as a secret. If the individuals and contracting companies do not abide by the terms of the contract, the developer can sue them in state or federal court for the value of the trade secret information and force them not to disclose the information to others.

The U.S. Supreme Court has recognized that patents can protect computer programs if the program has a defined, tangible output.(2) A computer program patent typically includes a block diagram drawing of the computer system, one or more flow charts, and possibly a detailed block diagram of other hardware, software or firmware modules that can be identified by the inventor. Only inventor (s) can apply for a patent but typically the inventor(s) assigns the rights to the patent to a company, or other legal entity, at the same time that he signs the patent application papers.(3)

The patent can relate to an operating system, applications program or a unique input or output scheme. It does not matter whether the program is embodied in hardware or software or a combination of both. Therefore, the manner in which the program is stored or used by the machine is inconsequential. The patent application includes a written description of the objects of the invention, a summary of the invention and a detailed description of at least one embodiment of the program. The application may describe several embodiments of the program, that is, different ways to use or configure the program, or several different subroutines

that enhance the value of the inventive portions of the program. The patent concludes with a section called the claims that define the unique, patentable invention. Only the most basic and important elements of the patentable computer program are described in the claims.

The patent owner can stop a competitor from using any program as long as a competitor's program includes each and every element specified in at least one patent claim. With patents, it does not matter whether the competitor independently developed the infringing program or simply copied the patented program.

To obtain patent protection, a patent application must be filed with the U.S. Patent and Trademark Office. A patent examiner reviews the patent application and determines whether the claimed invention is new or novel and unobvious in view of other programs or systems generally publicly disclosed before the filing date of the patent application. From past experience, the Patent and Trademark Office takes about two to three years to review and make a final determination as to whether a patent application defines a patentable invention in the computer arts. The cost for preparing and filing a patent application ranges from about $4,000.00 to about $6,000.00 with very complex programs costing upwards of $7,000.00. After the patent application is filed, there are other costs involved. Typically those costs do not exceed $1,000-$1,500. After the patent issues, the patent rights extend for 17 years.

The most important aspect of a patent right can be understood by the following analogy: the patent claim includes elements A, B, C and D. Assume in case 1, the competitor's program includes elements A, B, C, D, E and F but elements E and F make the program so commercially acceptable that it is more marketable than the program described in the patent application. The patent owner has the absolute right to stop the competitor because the competitor's program includes each and every element specified in the patent claims. Assume in case 2, that the competitor's program includes elements A, B, D, E and F, that is, patent claim element C is not present. Assume again that elements E and F make the competitor's program better than the patent owner's program. The patent owner cannot stop the competitor because the competitor's program does not include element C of the patent claim.

As for copyright protection, in recent years the courts have extended copyright law to protect computer program owners. Basically, a copyright notice must be placed at certain locations in the program, such as on the sign-on screen and buried in the source code. Also, a copyright registration application should be filed with the U.S. Copyright Office. The registration application must include one or two copies of the source code. If the source code includes trade secret material, there is a procedure for blocking out that secret material.

In order to stop a competitor from selling or "copying" your program, the copyright owner must prove in federal court that the competitor's program is substantially similar to the copyrighted program and that the competitor had access to the protected program.

Access can be shown in many ways, such as determining that the competitor had a

copy of the flow charts, a copy of the source code or a copy of the machine readable code when he developed the infringing computer program. If the protected computer program is widely distributed, the courts may presume that the defendant infringer had access to the protected program. The scope of protection afforded a copyright owner of a computer program has not been completely defined by the courts at the present time. However, one major court has stated that if the structure, sequence and organization of the program under scrutiny is similar to the copyrighted program, the programs are more substantially similar and the copyright owner can recover his damages (lost profits), the infringer's profits, an injunction to stop the competitor and attorney's fees. The cost of obtaining copyright registration, legal advice concerning the placement of the copyright notice and other matters generally runs between $500-$1000.00. if multiple programs are to be protected, the cost of protecting the programs is usually incrementally lower.

Trade secret protection for computer programs is based upon contract law. There must exist an obligation to maintain the program and program materials in confidence or in secrecy and the developer must prove that the obligation was broken. Also, the developer must prove in court that the program was maintained as a secret by showing what steps were taken to maintain the secrecy. This type of protection is typically used where very few sales are contemplated and a contract is signed for each sale or lease of the program. The obligation of confidentiality can run to all individuals who come in contact with the program. The cost of maintaining the trade secret status of a computer program is principally the business cost of negotiating the contract and inherent cost of maintaining the secrecy of the program.

In conclusion, the way to protect a computer program is based upon the commercial setting. A program with a long product life, a product life over seven years, is a good candidate for patent protection. A program that will be mass distributed or that has a relatively short life span, is a good candidate for copyright protection. Generally, it is recommended that both patent and copyright protection be utilized if such protection is economically justified. Trade secret protection is most important when dealing with a small, controlled market.

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1. 28 U.S.C., Sec. 1338.

2. *Diamond v. Diehr*, 450 U.S. 175, 209 U.S.P.Q. 97 (1981).

3. The inventory must sign a declaration or oath stating, among other things, that he believes himself to be the original and first inventor of the computer program (process or machine). 35 U.S.C. § 114. The declaration must be filed with the patent application. 35 U.S.C. § 111. If the inventor is under a legal duty to assign all of his work product to his employer or to a contracting party, the inventor typically signs an assignment of the patent rights over the employer at the time he signs the

declaration. See 35 U.S.C. § 261. The assignment is then recorded in the U.S. Patent and Trademark Office.