

COMMENTS

*Polemic in the
International Court of Justice*

*International Protection of
Computer Programs*

*Following in Another's Footsteps:
The Acquisition of International
Legal Standing by the
Palestine Liberation Organization*

*Some Aspects of Quebec's
Official Language Act*

*Bank Secrecy:
The End of an Era?*

INTERNATIONAL PROTECTION OF COMPUTER PROGRAMS

I. INTRODUCTION

The rapid growth of the computer industry in recent years is reflected in projected increases in the sales of computer programs.¹ World-wide sales of computer programs are expected to triple during the next decade. In light of this rapid growth rate, there has been a significant increase in the need for the adequate protection of the proprietary interests associated with computer programs.

In a business setting, the need for programming protection arises out of the value that one firm's programs might have to other potential users. Traditionally, program proprietors have used trade secrecy protection as the primary means of protecting their interests in the programs.² However, trade secrecy as a mode of protection is inadequate in the programming industry due to the unique proprietary problems associated with that industry.³ On the other hand, patent and copyright protection can provide the extensive coverage of the proprietary interests necessary to promote the further expansion of the programming field.⁴

1. See generally Francis, *Computer Services: Is There a Phoenix in the Ashes?*, FINANCIAL WORLD, June 13, 1973, at 4.

2. Under U.S. law, a trade secret may consist of:
any formula or pattern, any machine or process of manufacturing, or of any device or compilation of information used in one's business, and which may give to the user an opportunity to obtain an advantage over competitors who do not know it.
J. CALIMAFDE, TRADEMARKS AND UNFAIR COMPETITION 342 (1970).

3. The common law proprietary interest in trade secrets can be maintained only so long as there is a lack of knowledge on the part of others in the computer programming field. Trade secrecy is inadequate for two reasons: (a) a violation of trade secrecy is difficult to detect because the stolen program might be used internally within another corporate setting, and (b) the rapid turnover of programmers on an international basis makes it difficult to control the passing of trade secrets from a programmer's former employer to his present employer.

Trade secrets have traditionally been kept through contractual agreements not to disclose the "know-how" that went into the making of the program. "Know-how" is a term used to describe the aggregate of information used in the production of a product by a corporation, including both inventions which are patentable but not patented, and innovations incapable of being patented due to the fact that they do not rise to the level of invention required for patentability by the laws of the country under consideration. See notes 30-50 *infra* and accompanying text.

4. Some commentators have suggested extreme measures which could be taken by the program proprietor in order to avoid the need for patent and copyright protection. One author suggests the use of an "electronic key" which would make a specific program adaptable only to the computer system for which the sale or lease was made. See Goetz, *Protecting Computer Program Concepts and Copies*, 14 IDEA 7 (1970). Another author discusses the use of dummy lines of computer coding in a manner analogous to the use of fictitious symbols by map

This Comment is designed to acquaint the international lawyer with various considerations which underlie the obtaining of copyright and patent protection for computer programs. Both patent and copyright protection are considered in view of the statutory provisions of several technologically developed countries—the United States, Canada, the United Kingdom and the Soviet Union. In addition, the statutory provisions of the various countries are related to the particular ideologies of the administrative agencies which implement the patent and copyright laws within each jurisdiction.

Finally, the possibility of multinational programming protection is discussed in relation to several developing communities of states within both the patent and copyright frameworks. These sections are especially important in view of the meeting of the World Intellectual Property Organization (WIPO) in June 1974, at which a recommendation was made for the establishment of a world-wide registry to act as a clearinghouse for the international protection of computer programs.⁵ The advent of multinational protection of programs, coupled with a world-wide screening process, may result in a de-emphasis on the protection of programs by individual countries. However, an examination of programming protection in the context of the patent and copyright laws of certain key states provides a basis for the development of a multinational system. It is the purpose of this Comment to make such an examination, first from a copyright perspective, and then from a patent perspective. Using this examination as a foundation, tentative conclusions will be presented concerning the use of these forms of protection as solutions to international programming problems.

II. INTERNATIONAL COPYRIGHTABILITY OF COMPUTER PROGRAMS

The granting of monopolistic protection to computer programs through statutory provisions which give the proprietor exclusive rights to the possessory interests in the program for a term of years,⁶

makers such that an expert can identify the meaningless steps as telltale. See Hammer, *Computer Program Protection*, 14 *IDEA* 10, 10-13 (1970).

5. Letter from Stanley D. Schlosser, Office of Legislation and International Affairs, Patent Office, United States Department of Commerce, to Dale L. Carlson, Nov. 8, 1974, on file with the *Syracuse Journal of International Law and Commerce*.

6. The "term of years" of duration of statutory copyright protection in the United States is 28 years plus a renewal option. In comparison, both the United Kingdom and Canada grant statutory protection for the life of the author plus 50 years. The Soviet Union grants protec-

is an excellent means of providing the programming industry protection from infringing use. However, it is necessary to examine current international legislation for the purpose of determining the extent to which the copyright provisions are applicable to programming protection.

Copyright legislation has been adopted or proposed by two distinct groups: individual states and multinational blocs.

A. Individual States

Several states have considered the potential for the copyrightability of computer programs within the scope of the copyright laws of their respective countries. In this regard, the United States has been a leader in the consideration of the copyrightability of computer programs. In *Baker v. Selden*,⁷ the United States Supreme Court established the general principle that neither ideas nor the scheme or system for the application of ideas can be copyrighted. However, with regard to computer programs, the U.S. Copyright Office takes the position that it will consider the registration of programs for copyright purposes provided that certain requirements are satisfied.⁸ These requirements include: originality, notice, publication and the inclusion of a humanly perceptible form of the program with the materials sent to the Copyright Office. In the United States, the Copyright Office does not do comparative searches among the programs submitted for registration.⁹ Furthermore, the fact that the U.S. Copyright Office accepts programs for registration does not guarantee that the program will be given copyright protection. Rather, the determination of whether a given program is sufficiently original to be afforded protection is a matter to be resolved in the courts.

tion for the life of the author. See generally UNESCO, COPYRIGHT LAWS AND TREATIES OF THE WORLD (1973).

7. 101 U.S. 99 (1879). This decision concerned an attempt to copyright a bookkeeping system. The decision was based upon the rationale that a "system for the application of ideas" cannot be copyrighted. See *Brown Instrument Co. v. Warner*, 161 F.2d 910 (D.C. Cir. 1947); *Taylor Instrument Co. v. Fawley-Brost Co.*, 139 F.2d 98 (7th Cir. 1943), cert. denied, 321 U.S. 785 (1944); *Amberg File & Index Co. v. Shea Smith & Co.*, 82 F. 314 (7th Cir. 1897). Under the *Baker* doctrine, a program whose sole function is to rearrange data could not be copyrighted.

8. See U.S. Copyright Office Circular No. 61 (May 1969). This circular indicates that the U.S. Copyright Office will accept programs for registration if, *inter alia*, "the elements of assembling, selecting, arranging, editing, and literary expression that went into the compilation of the program are sufficient to constitute original authorship."

9. Once a program has been registered with the U.S. Copyright Office, a court determination is necessary to determine whether it was the first program of its kind to be registered.

Similarly, programs will be considered for registration within the statutory provisions of Canadian Copyright law. The Canadian Copyright Act defines copyright protection in terms of the exclusive right to "produce or reproduce" the work in any form whatsoever.¹⁰ The essence of Canadian copyright protection depends, in the words of the Canadian statute, on the creation of an "original literary, dramatic, musical or artistic work."¹¹ In considering whether or not computer programs would be copyrightable under Canadian law, two key elements must exist: originality, and the existence of a work. In this regard, the Canadian Copyright Office maintains that computer programs would not ordinarily be considered to be "works" within the meaning of the Copyright Act.¹² Nevertheless, the Canadian Copyright Office concedes that there might be situations where a program contains sufficient creativity to be afforded copyright protection as a work within the meaning of the Act.¹³ Thus, the question of whether or not a Canadian national could be granted copyright protection for a computer program within Canada would be determined, upon formal application, by the extent of originality and creativity exhibited in the program.

In comparison, in the Soviet Union, the Civil Code of the Russian Soviet Federated Socialist Republic¹⁴ lists categories of protectable works which are substantially similar to those recognized under the U.S. copyright law. In considering the question of whether or not computer programs would be granted copyright protection under Soviet law, the requirement of a "creative idea" for copyright pur-

10. Copyright Act, CAN. REV. STAT. c. 30, § 3(1) (1970).

11. *Id.* § 4(1).

12. Letter from Jane Johnston, Registrar, Copyright Office, Canadian Consumer and Corporate Affairs, to Dale L. Carlson, Dec. 12, 1974, on file with the *Syracuse Journal of International Law and Commerce*. Ms. Johnston indicates with regard to computer programs that:

[t]hey are not normally considered to be works within the meaning of the Copyright Act. To be registrable, a work must contain at least a minimum amount of creative authorship in the form of original literary, dramatic, musical or artistic expression. If a person writes a book or manual covering any subject, be it fiction, non-fiction, educational or even dealing with instructions in computer programming, copyright therein subsists immediately [when] it is produced, but such copyright does not extend protection to the idea or system.

[I]f a programmer feels that his computer program is a work within the meaning of the Act, in that it contains subject-matter which is 'eye readable' by other individuals therefore constituting a form of literary expression, further consideration would be given to his case upon receipt of a formal application.

13. *Id.* Where a program is thought to be copyrightable, a formal application should be filed with the Canadian Copyright Office.

14. R.S.F.S.R. 1964 GRAZH. KOD. (Civil Code) art. 475.

poses may operate to bar programs of a purely mechanical nature from protection.¹⁵ However, it might be expected that programs that exhibited creativity would be protected under Soviet copyright law.

Thus, copyright protection could be granted, in certain instances, to nationals of the United States, Canada and the Soviet Union upon registration with the respective copyright office. In this vein, a more significant problem is whether or not copyright protection can be obtained on a multinational basis. In this regard, the copyright policy of certain blocs of nations must be analyzed in order to determine their position on programming protection.

B. *Multinational Blocs*

An important development of concern to the international lawyer in the area of multinational copyright protection for programs has been the establishment of the Universal Copyright Convention (UCC).¹⁶ Computer programs are afforded protection under the UCC as long as they are not published. There are no other formal requirements for unpublished programs. An important initial consideration, therefore, is the manner in which "publication" can reasonably be defined under the Convention.¹⁷ Once the program has been published, protection is afforded to nationals of any contracting state under the Convention provided that there is compliance with certain specified formalities.¹⁸ It would be relatively simple to

15. J. BAUMGARTEN, U.S.-U.S.S.R. COPYRIGHT RELATIONS UNDER THE UNIVERSAL COPYRIGHT CONVENTION 70 n.190 (1973) [hereinafter cited as J. BAUMGARTEN].

16. Universal Copyright Convention, [1955] 216 U.N.T.S. 136. References to the "UCC" and to the "Convention" are to the Universal Copyright Convention as adopted in Geneva, Switzerland on September 6, 1952. See also UNESCO, *supra* note 6.

17. See McFarlane, *Legal Protection of Computer Programs*, 1970 J. Bus. L. 204. Mr. McFarlane suggests that "publication" of a program will occur when the program is offered to a user for the first time for valuable consideration. In other words, publication would take place at the time of the first sale. It is apparent that such a definition of publication would provide a convenient means of distinguishing unpublished programs from published programs.

18. In order to enjoy protection under the Convention, one must satisfy certain requirements of formality. The Universal Copyright Convention, art. III, [1955] 216 U.N.T.S. 136, provides that:

1. Any Contracting State which, under its domestic law, requires as a condition of copyright, compliance with formalities such as deposit, registration, notice, notarial certificates, payment of fees or manufacture or publication in that Contracting State, shall regard these requirements as satisfied with respect to all works protected in accordance with this Convention and first published outside its territory and the author of which is not one of its nationals, if from the time of the first publication all copies of the work published with the authority of the author or other copyright proprietor bear the symbol © accompanied by the name of the copyright proprietor

comply with these formalities in the programming industry.¹⁹

and the year of first publication placed in such manner and location as to give reasonable notice of claim of copyright.

Under the UCC, protection which has been achieved by compliance with the Convention's formality requirements (®, author's name, and the year of publication) will be honored by all member states.

If the program is written on punched cards, then it would be relatively simple to satisfy the Convention's formality requirements. There are several alternative ways of doing this. First, the punch cards could be pre-inscribed with the notice of copyright, making the notice observable on each card. The main difficulty posed by this pre-inscription is that a potential user will only be given notice of the copyright upon physically looking at the card deck. A second method of giving the proper notice would be to write out the notice formalities on a "comment card." Under this second method of supplying notice, the user would be given notice upon observing the card deck or upon making a "print-out" of the information contained on the deck. In the computer language Fortran, this method of notice would appear as follows:

```
C PROGRAM TO EVALUATE THE ECONOMIC CONSEQUENCES OF A
  WORLD FOOD SHORTAGE
C COPYRIGHT 1975 D. CARLSON
1 READ 100, SOYBEAN REVENUES
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The primary difficulty with this procedure is that the notice of copyright (which appears on the comment card) will not appear in the "output" or solution provided by the program, and a programmer who examines only the program's solution might not be aware of the existence of a copyright.

A third procedure for supplying copyright notice on punched cards would be to utilize the "comment" area of each card in the program, thereby coding in notice many times within the program. See Banzhaf, *Copyright Protection for Computer Programs*, 14 ASCAP COPYRIGHT SYMPOSIUM 118, 140-43 (1966). By following this procedure, the program user would have notice of the existence of copyright even if he only looked at the final solution produced by the program. In the computer language Fortran, this method of notice would appear as follows:

```
C PROGRAM TO EVALUATE THE ECONOMIC CONSEQUENCES OF A
  WORLD FOOD SHORTAGE
C COPYRIGHT 1975 D. CARLSON
1 READ 100, SOYBEAN REVENUES
2 PRINT 5
5 FORMAT (26H COPYRIGHT 1975 D. CARLSON)
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If magnetic tape is used to store the information contained on a program, as opposed to punched card storage, there are several possible ways of providing notice of copyright. One method of supplying notice on tape would be to code the notice onto the tape itself. This method is not very practical, however, due to the fact that the information stored on the tape is not perceivable to the unaided human eye. An alternative method of supplying notice on magnetic tape would be to attach a sticker containing the proper formalities of notice to the end of the tape or to the spool upon which the tape is wound. The argument advanced by Banzhaf, suggesting that the encoding of notice on the magnetic tape is sufficient because that encoding is as readable as the program itself, does not appear to be a tenable one. Such encoding of notice upon the magnetic tape, if used as the only means of providing notice, would encourage the use of the program by a potential infringer before the presence or absence of notice has been ascertained by that person. Rather, the encoding of notice on the magnetic tape should be supplemented by the use of a visually perceptible form of notice.

19. Banzhaf, *supra* note 18, at 140-43.

In comparison with the copyright provisions of individual states, the UCC does not provide a substantive copyright law which is to be implemented by the member countries.²⁰ Moreover, the Convention does not provide for the extra-territorial application of the copyright laws of one member state for purposes of giving protection for the benefit of its nationals in foreign countries.²¹ Instead, the Convention provides that a member state will grant to citizens of other member countries the same protection that is afforded to its own citizens.²² In addition, this "national" treatment extends to programs first published in other member countries.²³ It is also incompatible with the doctrine of "material reciprocity."²⁴ Therefore, a member country cannot demand that a computer program which would be protected by its own copyright laws be afforded protection in another such country which does not grant copyright protection to computer programs. Likewise, a member country granting copyright protection to programs cannot deny protection to a program from a member state that does not give such protection. Consequently, provided that any member country of the UCC grants copyright protection for computer programs to its own nationals, then there will be at least some copyright protection for programs under the Convention. Moreover, if several member countries grant copyright protection to programs, the protection afforded under the UCC will be significant.

Recently, there has been substantial importance attached to membership status in the UCC.²⁵ This has resulted in the revision

20. The Universal Copyright Convention, art. II, [1955] 216 U.N.T.S. 136, provides that:

1. Published works of nationals of any Contracting State and works first published in that State shall enjoy in each other Contracting State the same protection as that other State accords to works of its nationals first published in its own territory.

2. Unpublished works of nationals of each Contracting State shall enjoy in each other Contracting State the same protection as that other State accords to unpublished works of its own nationals.

21. See generally J. BAUMGARTEN, *supra* note 15, at 57-59.

22. See note 20 *supra*.

23. *Id.*

24. Under the doctrine of "material reciprocity", each member country would offer the same programming protection to another member country as is given to them by the other member country.

25. Sawyer, *The Commonwealth Copyright Act of 1968*, 43 AUSTR. L.J. 8, 9 [hereinafter cited as Sawyer]. Professor Sawyer indicates that one of the main purposes of the Copyright Act Revision was:

to make the small amendments to previous law required in order . . . to join the Universal system; the latter brings the inestimable boon of reasonable and almost formality-free protection in the United States of America.

of the copyright laws of some countries in order that they might become part of the Universal system. For example, Australia amended its copyright law in 1968 in order to comply with the membership requirements of the Universal system.²⁶ Also, the Soviet Union established adherence to the UCC in 1973.²⁷ In view of the UCC's increased significance, the Convention's copyright system would provide an excellent forum for both the international protection of programs and the world-wide exchange of programming information. Due to the fact that the Convention's copyright statutes are already established, the costs of using the UCC as a program protection agency would be absorbed into the existing framework of operating expenses. In addition, there would be no need for statutory changes under the Convention, since the relevant law to be applied is the copyright law of the member states.

The approach to copyright protection taken by the Revised Berne Convention for the Protection of Literary and Artistic Works (RBC) is similar to that taken by the UCC in that it utilizes a "national" treatment to protect works.²⁸ For example, a computer program that is copyrighted in England would enjoy protection from an infringement which took place in Switzerland by virtue of the fact that the copyright holder can sue for infringement in a Swiss court. Thus, the RBC can be an effective alternative for the international protection of programs. The significance of multinational blocs such as the UCC and the RBC as applied to programs, therefore, lies in their ability to act as a forum for the resolution of protection problems between member nations. However, a primary limitation on such use is that there is a large body of applicable statutory law.²⁹

The copyright method of affording program protection can be compared with another possible scheme of protection—the utilization of patent grants. Patentability, however, requires more creativity and is more difficult to achieve.

III. INTERNATIONAL PATENTABILITY OF COMPUTER PROGRAMS

The use of patent protection is another method of granting

26. *Id.* at 9.

27. See generally J. BAUMGARTEN, *supra* note 15, at 1.

28. Abel, *Copyright from the International Viewpoint*, 1 J. WORLD TRADE L. 399, 406-07 (1967).

29. The applicable statutory law would consist of the copyright statutes of all member countries.

statutory monopolistic protection to the program proprietor for a term of years. The patent scheme can also be separated into two source categories: Individual States and Multinational Blocs.

A. *Individual States*

The states which have considered the protection of computer programs have taken a less favorable position toward the granting of such protection under the patent framework than they have under copyright.³⁰ Most states which provide patent protection require that the material sought to be patented be new or novel and be a significant contribution to the state of technology.³¹ As in the copyright area, the United States has also been a leader in discussions concerning the patentability of programs.

In the United States, patentability will be denied if an invention is considered to be too obvious by a person having "ordinary skill in the art" to which the subject of the invention relates.³² Ordinarily, this person would be the programmer in a particular field of specialization.³³

Under existing law within the United States, it is doubtful that computer programs can be patented.³⁴ Patentability under U.S. law requires that a program be either a new machine, a new process or a new composition of matter.³⁵ A program cannot be represented as a machine unless the program and the computer are considered as a unit. In fact, they are usually separate entities.³⁶ In addition,

30. The distinction between patentable and non-patentable material depends upon the country being considered. In some countries "inventions" will not be considered to be patentable if the advance can be construed to be a discovery rather than an invention. For example, in Brazil and the Netherlands "inventions" are rejected on the basis that they are really discoveries and not acts of invention. Other countries require that the advance under consideration have some sort of industrial application, and not be used solely for research purposes. In Argentina and the Netherlands there is a requirement written into law that the invention have at least limited industrial application. Such a requirement would probably not impose an undue burden upon firms seeking programming protection due to the fact that the programs often have a business-related purpose. See generally UNESCO, *supra* note 6.

31. See generally Horwitz, *Patents and World Trade*, 4 J. WORLD TRADE L. 538, 538-44 (1970).

32. 35 U.S.C. § 103 (1970).

33. The programmer and the holder of the proprietary interest in the program may well be separate entities. For example, the person who wrote the program may have assigned the proprietary interest to his employer, resulting in a corporate proprietorship.

34. See note 36 *infra* and accompanying text.

35. 35 U.S.C. § 101 (1970).

36. Under the "mental steps" doctrine, mental processes standing alone are not patentable. *But see In re Prater*, 415 F.2d 1393, 1402 n.22 (C.C.P.A. 1969), wherein the court indi-

computer programs generally consist of combinations of established symbols, and within any given program only the sequence of procedural steps is unique. Thus, a program probably cannot be considered to be a "new composition of matter," and if a program is to be patentable at all, it must be as a "process."³⁷ In patent law usage, "the term 'process' means process, art, or method, and includes a new use of a known . . . machine . . ."³⁸ In the landmark case of *Gottschalk v. Benson*,³⁹ a patent was sought for a program which converted binary code into pure binary code. The U.S. Patent Office ruled that the program under consideration was unpatentable because it included within its scope certain mental processes and mathematical steps which are not capable of being patented. On appeal, the Court of Customs and Patent Appeals reversed concluding that the program constituted a "sequence of steps" which could be patented as a "process." The Supreme Court disagreed, holding that the program under consideration could not be patented because the granting of a patent in this case would constitute the protection of the idea embodied in the method of converting binary code into pure binary code.⁴⁰ Justice Douglas implied in dicta that programs for the processing of data are not patentable under the present patent statutes in the United States.⁴¹ Consequently, it is unlikely that programs are patentable under current U.S. law.

cated that the "mental steps" doctrine would not apply to a "mechanical" (*i.e.* machine-based) case.

37. It is conceivable that a program can be construed as a method of transferring electrical input signals within the computer.

38. 35 U.S.C. § 100 (1970).

39. 409 U.S. 63 (1972).

40. There exists, therefore, a broad principle of patent law which might prevent the issuance of a patent on a computer program. This principle is that no patent may be obtained upon an idea standing alone. See *Burr v. Duryee*, 68 U.S. (1 Wall.) 531, 570 (1863); *Kruger v. Whitehead*, 153 F.2d 238 (9th Cir.), *cert. denied*, 322 U.S. 774 (1946); *In re Patton*, 127 F.2d 324, 327 (1942). For example, a patent may not be obtained for mathematical equations or a bookkeeping system. See *Baker v. Selden*, 101 U.S. 99 (1879); *Don Lee, Inc. v. Walker*, 61 F.2d 58 (9th Cir. 1932); *Supermold Corp. of Am. v. Am. Tire Machinery Co.*, 27 F. Supp. 385 (S.D. Calif. 1939), *aff'd*, 114 F.2d 759 (9th Cir. 1940).

It may be argued that the underlying basis for the decision in *Gottschalk* related solely to the idea-expression dichotomy (*i.e.* that an idea, standing alone, cannot be protected, whereas the expression of the idea can), and therefore, that the holding cannot be broadened to programs with respect to which only the expression of the ideas is sought to be patented. Moreover, the attempt to patent an idea (*i.e.* the mathematical conversion of binary code into pure binary code) as occurred in *Gottschalk* is probably an exceptional situation for which programming protection is sought. More likely, protection will be sought for programs where the expression of an idea is to be patented.

41. 409 U.S. 63, at 73 (1972).

Similarly, computer programs are probably not patentable under Swiss law.⁴² The Swiss federal court has indicated that programs do not reach the level of inventiveness required for patentability under Swiss patent law.⁴³

Likewise, in Canada, where patents may be granted for the categories of "art, process, machine, manufacture, and composition of matter,"⁴⁴ it is highly doubtful that programs might be patented. In this regard, the Canadian Patent Office has issued guidelines indicating that a computer program, per se, is not patentable.⁴⁵ In contrast, the Canadian Patent Office has taken a different position with regard to "programmed computers," as indicated by the Commissioner's Decision in Application No. 961,392.⁴⁶ In that decision, wherein the patent applicant sought to patent a computer program which was used for the purpose of determining telephone traffic density, the Commissioner indicated that "a computer that is programmed in one way must be deemed to be a machine which is different from the same computer when programmed in another way"⁴⁷ Therefore, under Canadian law, programs are probably patentable in conjunction with the corresponding computer, although programs standing alone probably do not meet the requisite standards.

Similarly, in the United Kingdom it is uncertain as to whether programs meet the requirements for patentability, namely that the invention be "for a manner of a new manufacture."⁴⁸ This standard

42. 132 BNA PAT., T.M. & COPYRIGHT J. A-13 (1973).

43. *Id.* As the Journal stated, in the decision, *In the matter of J.F.C. against the Swiss Federal Office of Intellectual Property*, the applicant sought patent protection for a "measuring process for the Quantification of Multidimensional Subjective Notions and Devices for Carrying out the Process Constituted by Programs for an Electronic Computer." The court held that the applicant's process "constitutes an abstract method of evaluation [that] does not fail [sic] under the definition of invention in Swiss patent law."

44. Patent Act, CAN. REV. STAT. c. 203 (1952).

45. The Canadian Patent Office has stated that:

(g) A computer programme per se, an algorithm, or set of instructions to operate a computer (which is essentially mathematical information developed from an algorithm) is not patentable.

See Canadian Manual of Patent Office Practice § 12.03.01(g).

46. See Commissioner's Decision with respect to Application No. 961,392, Patent Office Record (Jan. 18, 1972). See also Henderson, *The Patentability of Computers, Computer Systems and Programs*, in *COMPUTERS AND THE LAW CONFERENCE PROCEEDINGS 1968*, 148 (D. Johnston ed. 1968).

47. *Id.*

48. Patents Act of 1949, 12, 13 & 14 Geo. 6, c. 87. See also Statute of Monopolies, 21 Jac. 1, c. 3 (1623). Section 6 of the Statute of Monopolies indicates that:

Letters Patent and grants of privilege for the term 14 years or under hereafter to be

amounts to a minimum level of inventiveness required for the program to fall within the exceptions to Section 6 of the Statute of Monopolies under Section 101 of the Patents Act of 1949.⁴⁹ As of the present time, there has been no case before the High Court on the issue of whether or not valid patents can be obtained in the United Kingdom for computer programs.⁵⁰ Consequently, the patentability of computer programs in the United Kingdom is questionable.

The foregoing analysis indicates that among the leading technologically developed countries that have considered the patenting of programs, such patentability is in doubt. Therefore, it is apparent that there is no statutory base of patent law among the individual states which will lend itself to the discussion of patentability of programs on a multinational basis. Nevertheless, in view of the fact that utilization of patent grants for program protection is a future possibility, the patent policies of certain blocs of nations must be examined.

B. *Multinational Blocs*

There are two developing communities which might have a substantial impact on the patenting of programs from a multinational perspective. These communities provide the advantage of offering a single patent which would replace the patents granted by the individual member countries. Consequently, under the Patent Cooperation Treaty (PCT), member countries would avoid the necessity of multiple patent searches by combining with other member countries to effect a single search.⁵¹

made, of the sole working or making of any manner of new manufacture within this realm, to the true and first inventor and inventors of such manufactures which others at the time of making such Letters Patents and grants shall not use, so as also they be not contrary to the law or mischievous to the state

Section 101 of the Patents Act construes "invention" to mean "any manner of new manufacture within section 6 of the Statute of Monopolies."

49. See note 48 *supra*. If the High Court is to find computer programs patentable within the meaning of the Patents Act of 1949, it must find that the programs are "a manner of new manufacture."

50. Although there have been no High Court cases in the area of patentability of computer programs, a case has come before the Patent Appeal Tribunal. In *Slee and Harris' Applications*, [1966] Pat. Cas. 194, the Superintending Examiner held that the invention, relating to a method of operating a computer which performed iterations characterized by the process where one iteration was initiated before the previous iteration was completed, was patentable provided that the form of the claim was acceptable.

51. Horwitz, *The Patent Co-operation Treaty*, 5 J. WORLD TRADE L. 61, 65-66 (1971). Although the PCT provides for a single patent search, it does not abolish any national patent, nor does it establish an international patent or rules governing infringement. The unique

Likewise, under the European Patent System (EPS),⁵² a single patent is granted to all Common Market countries. Unfortunately, transnational patents for computer programs would not be available under the EPS because they are specifically excluded from coverage under that system.⁵³

The prospects for the utilization of a single patent system for computer programs on a multinational basis are limited with regard to the PCT and the EPS. However, the proposals of the World Intellectual Property Organization (WIPO) make world-wide patenting systems for computer programs feasible.⁵⁴ These proposals are discussed in the next section.

IV. TRENDS TOWARD MULTINATIONAL PROTECTION

There has been a substantial movement on the part of world-wide organizations to implement an effective programming protection system. This impetus began when the Secretary General of the United Nations called for a study of the various forms of protection for computer programs.⁵⁵ In response to the Secretary General's request, a report was prepared by the Economic and Social Council,⁵⁶ which called for further studies "in particular on the management of information systems and data processing centers, the use of modern communication systems including satellite-related systems, and

aspect of the PCT is that each member country retains sovereignty over its own patent system and practices.

52. Horwitz, *Practical Problems of Acquiring and Exploiting Patents and Trademarks*, in *THE ENLARGED EUROPEAN COMMUNITY: LEGAL CHALLENGES FOR AMERICAN BUSINESS* 209 (L. Silverstein ed. 1973). It should be noted that the EPS might pose substantial difficulty to the U.S. patent proprietor because of the exclusion of the United States from the "restricted" convention. The "restricted" convention, consisting of member states of the Enlarged European Community (EEC) would be granted a single patent affording protection within the PCT. Consequently, the EPS will enhance the ability of EEC countries to compete with the United States from a patent perspective.

53. *Id.* at 209.

54. Letter from S. Schlosser, *supra* note 5.

55. See U.N. Doc. E/4800, para. 201 (1971). As the document stated:

201. In the light of all the possibilities and needs related to the protection of computer software, it is recommended that BIRPI [United International Bureaux for the Protection of Intellectual Property] and WIPO with the assistance of government experts should be requested to study the following questions:

(a) What form of legal protection of computer programs at the national level is most appropriate, both from the point of view of the developing countries and of the producers of software;

(b) What new international arrangements, or modifications or reinforcement of existing arrangements are called for.

56. See U.N. Doc. E/C. 8/11 (1973).

the ready accessibility of software."⁵⁷

In light of the initial steps taken by the United Nations, WIPO met in June 1974, to study the possibility of protecting computer programs on an international basis. At the meeting, a representative of the International Association for the Protection of Industrial Property recommended the establishment of a world-wide registry for computer programs.⁵⁸ The International Bureau of WIPO agreed to study the recommendation under various schemes of protection, including both the patent and copyright schemes.⁵⁹ Consequently, there is a substantial possibility that a uniform protection system for programs might be implemented in the foreseeable future.

In view of these recent developments, both the copyright and the patent systems of transnational protection might be considered to be viable alternatives to the present methods of protection on a national basis. Furthermore, the creation of a world-wide registry for programs would be a useful starting point for the implementation of either a patent or a copyright system on a world-wide scale. However, utilization of a copyright system would probably take precedence, simply because such a system is compatible with the existing copyright laws of several states.

A world-wide copyright protection system might employ the UCC procedural framework in combination with a world-wide registry of all protected programs. Under such a system, the program proprietor would furnish WIPO with a copy of the program for which protection is being sought together with a list of the member states in which protection is desired. WIPO would, in turn, add the program to its register, and send a copy to the member states listed in the application. At this point the substantive law of the member states would be applied to determine the extent of protection to be given to the program. WIPO would not be involved in actions for infringement. Instead, the UCC would act as a forum for the resolution of programming disputes.

V. CONCLUSIONS

Because of the inadequacy of trade secrecy in the programming

57. "Software" is a term used to describe sets of instructions given to computers and is broadly synonymous with "computer programs." "Hardware," on the other hand, consists of the magnetic, electronic and electrical devices which comprise the computer. Hardware is primarily manufactured by very large corporations such as International Business Machines.

58. Letter from S. Schlosser, *supra* note 5.

59. *Id.*

field, there is a need for a more adequate form of protection on a transnational basis. Both copyright and patent protection are viable solutions to the protection problem. Copyright protection is favored from the standpoint that it is already being applied to programs for registration purposes in several states. On the other hand, international implementation of patent grants for programs appears to be difficult. This difficulty is shown by the doubtful ability to patent programs under the existing laws of the United States, Canada and the United Kingdom. Also, computer programs are unpatentable under the European Patent System.

Perhaps the solution to the international programming problems will evolve through the use of the UCC's copyright scheme of protection in combination with WIPO's world-wide registry. Such a world-wide protection system would provide substantial operating efficiency by eliminating the need for duplicative national systems. In addition, cost savings would result by spreading the cost of the single system among all member countries. Finally, by utilizing the UCC's scheme, there would be no need to establish another copyright framework within which to give adequate protection. Consequently, an international scheme of protection could be implemented that would insure the protection of proprietary rights at a minimum cost to the nations involved.

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