Review of Computer Intellectual Property Rights and Copyright in New Zealand

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Since the decision of the High Court of New Zealand in IBM v Computer Imports [1989] 2 NZLR 395, it has been clear that copyright subsists in computer software in source code form as a literary work and that the copying of the object code is an unauthorised reproduction of the source code.

Technology is developing so rapidly that even more complex issues which raise questions of public policy, anti-competitive behaviour and standardisation must soon be considered by the computer industry, lawyers and the courts.

Most countries which have considered protection of computer programs have chosen to treat computer programs as literary works within their existing copyright framework. In New Zealand the Law Reform Division of the Department of Justice has instructions from the Minister of Justice to prepare a Copyright Bill.

The New Zealand Society for Computers and the Law has sponsored a series of forums on the Protection of Computer Intellectual Property Rights and Copyright in New Zealand with two main purposes in mind:

1. to provide the computer industry and lawyers with an opportunity to shape the legislation; and

2. to provide the Law Reform Division of the Department of Justice assistance in the drafting of the Copyright Bill.

During the course of these forums in Wellington, many key issues were discussed by leading industry groups and intellectual property lawyers. There was a divergence of views on many of the issues and these differing views are discussed in this article.

Should the structure, sequence and organisation of a program be protected?

This question was first raised in the American case of *Whelan Associates Inc v Jaslow Dental Laboratory Inc* 797 F.2D 1222. This case stands for the proposition that copyright protection extends not only to the prohibition of a substantial copying of a computer program, but also extends to the "look and feel" of the program.

If this decision is adopted in New Zealand, software developers will have a better chance of protecting all aspects of their software, however such protection may interfere with the normal enjoyment of the user's rights in the software in the following situation.

A 4GL like SQL Windows has a pre-defined structure, sequence and organisation that must be adhered to by users developing new windows compatible programs. Different actions, settings and commands for a particular window are grouped neatly in categories in a pre-defined format. If the program structure, sequence and organisation is to be protected, the situation may arise where each different user of this 4GL may infringe each other's work, particularly when they are developing software for the same market.

The "structure" of a program is less obvious in the case of programming languages like COBOL, FORTRAN and C. However, if the principles of "structured programming" are strictly adhered to, some resemblance in structure and organisation of different programs, written in the same language, may be apparent.

Moreover, the logic, structure and flow of a program is often dictated by the

specific industry that will use the program. For example, a program that deals with claims in the insurance industry "mirrors" the way that the claims are normally handled in a manual system.

Thus, the structure of a computer program is so closely intertwined with its logic, processes and methods of operation that to protect the structure is to protect the programmer's logic and methodology - the idea.

The current trend of thinking in the European Community is to deny protection to "ideas, principles, logic, algorithms or programming languages underlying the program".

Should screen displays, or the user interface of a program be protected?

The problem of protecting user interfaces is highlighted by the action taken by Apple in the US against Microsoft and HP over the alleged infringement of Apple's copyright in its Macintosh user interface involving icons, pull down menus and a mouse.

There are two different views concerning the protection of screen displays or user interfaces generated by the execution of a computer program. The first view suggests that the screen display is protected by copyright subsisting in the underlying computer program as a literary work. The second view suggests that the screen display should be protected as an artistic work separate from the computer program which is a literary work.

The US Copyright Office has adopted the second view and ruled that a single software copyright protects both the computer code and the graphic textual displays.

It should be noted that a mere similarity between two visual displays generated by two separate programs is insufficient to establish that the first visual display had been copied by the second. There must be some nexus to indicate that the second visual display was obtained by the use of the first visual display. The design and presentation of the visual display may also be influenced by factors such as the function and purpose of the program, market forces, the hardware used or even the design utilities provided by a 4GL and the needs of the industry for user-friendly interfaces.

It has been argued that the extension of current copyright protection to include the "look and feel" of computer programs will stifle competition and reduce the number of competing products in the market place. It may also prevent rival hardware manufacturers from writing software to emulate another hardware manufacturer's products. That would be a great setback to global moves for open systems.

The extension of the protection may widen copyright law to cover ideas that in addition to their expression.

Alternatively, there may be merit in extending protection, as software developers have in many cases expended large sums of capital on research and development.

Right to Control Use

Should legislative guidelines be set in place in the Bill to entrench the right of the copyright owner to control the use of a computer program?

Copyright is an incorporeal right which is exercised by the copyright owner. It is separate from the property in the object in which copyright subsists. It does not restrict or prevent the unauthorised use of a computer program? What is then the effectiveness of using copyright to protect computer programs. It is the "purpose of a program" to operate a computer and the whole value of the program is not in the way in which it is expressed but in the results which it

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produces."[1]

The copyright owner of a computer program enjoys a number of exclusive rights which if exercised by someone else without a licence would amount to an infringement. These restricted acts are outlined in section 7(3) of the NZ *Copyright Act 1962*.

One of these exclusive rights is the right to prevent the reproduction of the work in a material form. Argument has been advanced that the exclusive "right to control use" by the copyright owner is unnecessary as the very use of a computer program results in a reproduction and is thus an infringement. That argument is based on the assumption that reproduction in a material form takes place when a copy of the program is loaded into memory (RAM) in order for the user to utilise the program.

Based on that assumption, should there be an exception to authorise the loading and execution of a program in memory of a non-infringing copy of a program by an authorised user? Or can it be said that there is an implied licence from the copyright holder to make a reproduction in RAM in order to utilise the program? The argument of an implied licence runs into problems if a contract already exists as in the case of "shrink wrap"[2] licences for "off the shelf" packages.

The UK *Copyright, Designs & Patents Act 1988* has taken note of this unusual predicament and has expressly excluded this loading "which is incidental to running a program" as an infringement.

Under the present New Zealand Act, there is no "right to control use" of a program by the copyright owner. The Act has however, provided some guidance as to the sort of use that copyright works may be put to without infringing copyright in the "fair dealing" provisions. The defence of "fair dealing" will only be applicable if a portion of the software has been copied for research or private study.

Unlike the Australian Act, there are no provisions in the New Zealand Act defining "fair dealing". However, it is contended that "fair dealing" provisions are not applicable where the research undertaken was for the purpose of creating competing software. In *University of London Press v University Tutorial Press* [1916] 2 Ch. 601, the reprinting of examination papers were held not to be fair dealing as the papers were sold in competition with the copyright owner. This point is quite relevant when we are dealing with adaptations and reverse engineering of computer programs for the purpose of providing competing products.

There are concerns that the introduction of a broad right to control use would prevent rival hardware vendors from undertaking analysis of a piece of software for the sole purpose of interfacing to another vendor's equipment. Such a move would not be in the interests of the users who are presently demanding interoperable systems.

It is my opinion that no additional "right to control use" provisions are required.[3] If the owner of the software wishes to retain some control over the use of his program beyond the existing "exclusive rights" that he already enjoys, negotiating an appropriate contract may be a better way of achieving this result.

In the absence of contract and in the case of a pirated copy of the software, the safeguards against reproduction and the test of substantial copying should be applied.

Rental Right

Should there be a rental right for computer software?

It has been suggested that to prevent the evolution of a rental right would be to unduly influence the marketplace. A rental right allows a potential buyer to

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of the originals"*

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evaluate the program for a limited period to determine its suitability for the purpose, prior to outright purchasing the program or to allow a user the usage of the program.

It is worthwhile noting that the rental right concept might only be appropriate for small programs and software for the entertainment industry.

The contrary argument that has been raised is that the rental right may encourage home copying for a fraction of the cost of purchasing the original. There is no easy way of policing what the borrowers of the program might do with the program once they are within the confines of their homes.

The problem of lost sales of original programs due to the proliferation of rental schemes may be controlled by the introduction of "non-legal" protection devices such as 'locks". These "locks" are used to prevent usage of the program if certain checks do not return the right sequence of information. The variety of possible "locks" include devices which will prevent the program being used after a certain date or a check against the serial number of the computer to allow access to the program only from that particular computer. Another possibility is the introduction of passwords which expire after usage of the software for a length of time.

A number of countries involved in the GATT talks have proposed that the copyright owner should have the right to authorise or prohibit rental of the originals or copies of originals of computer software or at least the right to obtain an equitable remuneration corresponding to the economic value of such use.

The new UK Act has made the rental of computer programs one of the exclusive rights of the copyright owner.[4] That right may be reduced under section 66 of the Act to a right to equitable remuneration.

Adaptation

Should adaptation of programs be permitted; for example adaptation so that the program may function in another brand of machine?

In the industry, we call this "porting the software to another platform". This process is relatively common as software developers "adapt" their software to run on as many machines as possible to maximise the returns from their investment in the software.

It is not uncommon for a hardware vendor to promote their hardware by providing as many software solutions as possible. This practice is increasing as the differences in hardware decrease due to the global trend for open systems and system connectivity, as well as the falling profit margin in hardware sales. Hardware vendors often have licensing arrangements with the software developer whereby "adaptation" of the software developer's software to run on their hardware is allowed.

It is submitted that the current licensing arrangements are adequate and do not warrant the inclusion of an adaptation right as an exception to the exclusive rights of the owner.

Reverse Engineering of a Computer Program

Reverse engineering has become an increasingly common practice albeit a questionable one in a "clean room" environment. It refers to the activity of "reproducing" a program without a direct copying of the source code or the object code.

It often involves two teams of programmers. The first team has the task of studying the "workings" of the program which may also involve studying the source or object code. This group produces a set of specifications which capture the idea and functionality of the program involved. This set of specifications is

handed over to a second team of programmers who are not "contaminated" (i.e. they have not had any access to the program to be "reverse engineered"). The resulting program would normally be an improved form of the earlier program and produced to compete directly in the same market. This was the situation in *NEC Corp v Intel Corp* (1989) 10 USPQ 2d where Intel's microchip which contained "microcode" or "microprogram" was reverse engineered and improved to produce the NEC chip.

There are strong arguments for and against extending copyright to prevent reverse engineering.

The proponents for protection are likely to be the larger and more established computer hardware and software firms who would be severely disadvantaged by "clone" manufacturers. Without adequate protection their work could be easily plundered without recompense to produce new improved versions at a fraction of the cost.

However, to allow protection would in some cases be granting "patent-like" protection under the aegis of copyright thereby allowing copyright holders to circumvent the tougher requirements of the patent system for protection.

In a situation where there have been substantial improvements and changes in program syntax (as in the use of a different programming language), it would be quite difficult to prove that a "reproduction" of the original program has taken place although use may have been made of the earlier program to derive the latter work. This is due to the requirement that the latter work must bear 'a substantial objective similarity or resemblance" to the work copied if there is to be an infringement.

In the Australian case of *Autodesk v Dyason* (1989) AIPC 90-589 the judge at first instance decided that it was not necessary to do a line by line comparison to see if copying has occurred. He reasoned that since the functions of the two locks (which he concluded were computer programs) were the same there was a "sufficient degree of objective similarity between the two locks."

He placed an emphasis on the word "function" in the Australian definition of "computer program" and decided that the concept of function suffices in considering the question of whether there is "sufficient degree of objective similarity".

This decision may extend copyright in Australia to protect the "look and feel" or the ideas behind computer programs. This decision has now been reversed by a recent decision of the Australian Full Federal Court [see Full Federal Court decision beginning on Page 1]. The court found that there was no similarity in the expression of the AutoCAD lock and the program and hence the "look and feel" argument remains unresolved. It is unlikely that the decision at first instance will be followed in New Zealand as there is no definition of computer program in the present New Zealand Copyright Act.

This case illustrates the difficulty of drafting a definition of "computer program" to cover all possible situations. A broad definition could extend the concept of copyright as we know it today, to ideas underlying computer programs.

Due to the rapid pace of technological innovation and the inherent difficulties in drafting an appropriate definition it might be appropriate to exclude a definition of computer program altogether from the Act.

However, if a definition of computer program is to be incorporated, it should be consistent with corresponding definitions in other Acts such as the Crimes Act and the Privacy Act.

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Authorship and Ownership of Computer Programs

The basic rule as the law stands is that the author of a computer program is the owner of the copyright subsisting in the program except in the situation where the "work is made in the course of the author's employment by another person under a contract of service or apprenticeship" where copyright vests in the employer.[5]

The Act also provides another exception in the case of certain artistic works where the owner of the copyright is the person who commissioned the work.[6] However, this exception does not extend to a computer program as a literary work. Unless the copyright is assigned to the commissioner of a computer program by contract, copyright in the program will remain vested with the programmer or his employer as the case may be. This is a point worth noting if a software house or an inhouse computer department decides to hire contract programmers to fill in a temporary staff shortage. Unless a contract is made assigning the copyright before the commencement of any work, the contractor will be allowed to leave at the end of his contract with the copyright to the commissioned work.

Commissioned Computer Software

The question of ownership is important in the case of a client commissioning a system from a software developer. This question has often been overlooked in the development contract between the two parties until their relationship has become quite untenable.

In many instances, the commissioner has provided the specifications and inhouse expertise for the new system which was translated into program code by the developer. The new system may provide a competitive edge for the commissioner in their line of business. It would be quite difficult for the commissioner to prevent the developer from marketing the same system to the commissioner's competitors unless copyright in the software has been assigned or the question of "restricted sales" has been addressed in the contract.

The ability of the commissioner to obtain an assignment of copyright will ultimately depend on the relative bargaining position of both parties. If the copyright is so assigned, it will be reflected in the overall cost of the system. Otherwise, it may not be economically viable for the developer to write a "one-off" system.

The question then is, should the present Act be amended to vest ownership of copyright automatically with the commissioner of the software?

There are four possible courses of action for reform. The first course is the "no action plan", which will retain the status quo. The second option is to vest the ownership of copyright with the commissioner and the third option is to create an additional "marketing right" which is retained by the developer while the commissioner owns the copyright. The fourth course is to distinguish between the "situation where the software was developed specifically for one party, and the situation where it is available to the public at large (or at least a group of people)."[7]

The proponents of the fourth option suggest that in the case where the software was developed for a group of people, copyright should vest in the commissioner of the work for its investment in the commissioned software and that it would be unfair otherwise to allow the software to be copied without its licence. However, if the software was commissioned and developed for one party, that party should own the copyright in the software.

The European Commission has proposed that "where a computer program is created under a contract, the natural or legal person who commissioned the program" shall be the owner of the copyright unless otherwise provided by contract.

It is submitted that maintaining the status quo would be a better option allowing market forces, industry trends and the law of contract to further determine the respective rights of both parties.

Computer Generated Works

The question of authorship is more perplexing in the case of "computer-generated works". Who is the author and therefore the owner of copyright subsisting in these works, assuming that copyright subsists in the absence of any human intervention in generating the work? Our present Copyright Act assumes that there is a human author and that some degree of skill, labour and judgment has been exercised by the human author before any copyright can subsist in the work.

In reality, some sort of human intervention must have taken place (even if it is minimal) for the work to exist. Was there some sort of equipment and process put in place to initiate the work? Was there a program generator involved which requires a user to answer a number of questions or fill in some tables or data to cause the program generator to produce the computer-generated work? Who created the initial expert system to produce the computer-generated work?

The UK Act states that in the case of a computer generated work the "author is the person by whom the arrangements necessary for the creation of the work are undertaken." This broad section may give rise to uncertainty in situations where more than one person is involved in making arrangements for the creation of the

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work. It would be very difficult to identify these persons, trace the software that was used, the software that was put in place and the data which was entered that lead to the eventual creation of the work.

It is suggested that the following restrictions be supplied.

If a computer-generated work created by a system (which could be an expert or artificial intelligence system or some other system which has the capability to generate such a work) is not unique in the sense that the exact work or a very similar copy of the work can be duplicated by similar systems (running the same software) then there should be no basis to warrant vesting copyright in that work.

However, if copyright must subsist, the owner of the copyright should be the author of the software used in creating the work. System in this instance relates to both hardware and software. It is not submitted that joint ownership should be given to the maker of the hardware for that would be tantamount to saying that a novelist should share his or her work with the maker of the pen or the instrument used to write the novel.

In all other cases, if the work created by the system is derived due to the input of sufficient skill, labour and judgment on the part of a person or persons, that person or persons should be the author or joint authors of the computer generated work.

Conclusion

This article may not represent the official views of the New Zealand Society and it is not intended that any consensus will be reached at the end of the forum on any particular issues. Rather, the purpose of this article, as the title suggests, is to briefly review some of the issues discussed during these forums.

I would like to thank the Law Reform Division of the Department of Justice, the Ministry of Commerce, ITANZ, the NZ Computer Society, the NZ Law Society, the chairman Ken Moon of A J Park & Son and all participants for contributing to the success of these forums.

Footnotes

1. Henry Carr, Computer Software: Legal Protection in the UK.

2. A shrink wrap licence is a document that comes packaged with "off the shelf" software. It contains the terms of the licence agreement which the purchaser of the software is deemed to have agreed to, by removing the packaging material.

3. The majority of the participants at the forum were against the idea of introducing a "right to control use" for various reasons. That was also the conclusion reached by the Industry Property Advisory Committee in its report to the Minister of Justice on The Legal Protection in NZ for Computer Programs dated 18 March 1986.

4. s.18 UK Copyright, Designs & Patents Act 1988.

5. s.9 NZ Copyright Act 1962.

6. s.9(3) NZ Copyright Act.

7. Barnett, Harrison and Brown, Copyright and Computer Programs - a submission made by the law firm of Chapman Tripp Sheffield Young dated 9 August 1990.