
Prize Winning Essay

Software Industry Association and Electronics Industry Association will be invited to attend.

The seminar may be followed by the opportunity for free 30 minute

appointments where people from the industry can ask practitioners in the area about more specific problems.

For more information about the Western Australian Society please contact Michael Paterson on (09) 385 1389, fax (09) 385 2125.

What legal protection should be given to computer programmes and is the current law adequate?

by Darren Charles Ho

[The following is the prize winning entry from the Queensland Society for Computers & the Law student essay competition.]

Foreword: The Clever Country

In 1969, the United States of America redefined the line between the realms of science fiction and reality. In that year, as a result of its vision and planning, it successfully achieved its goal of landing the first man on the moon. Australia, today, urgently requires a similar injection of such vision and planning into its attempt to achieve its goal of becoming the 'clever country'.

The 'clever country' policy of the current Australian government is a belated acknowledgment of the fact that computer technology is with the nations of the world to stay. In a short period of time, the so-called 'new technology' has infiltrated and revolutionised every aspect of the ordinary Australian's life. Indeed, who of the new generation of Australians could imagine living in a world without such things as automatic teller machines, digital watches, word processors or computer games? Computer technology, in short, has not only revolutionised life in Australia, but has become an integral part of every Australian's life.

As with any new innovation that promises great advances and benefits to mankind, the problems, both perceived and real, created by computer

technology have the potential of being far greater than those which such advances and benefits solved. Such problems challenge the Australian legal system to provide adequate protection to those interested and compensation to those aggrieved.

It is the challenge of providing adequate legal protection to the computer programme that is the problem area focussed on by this document. The computer programme is at the heart of computer technology. It is the device that allows a computer the flexibility to adapt to the environment imposed by the user's problem. It is this nature of computing technology, in allowing multiple applications, that allows its infiltration into every aspect of life.

While the focus of the document is on the protection of the computer programme, it must constantly be remembered that this is just one of the many problems, created by computer technology, with which the law must deal. With this in mind, and as any consideration of the adequacy of Australian legal protection must include a consideration of the 'clever country' policy, the author is of the opinion that a code of law, which deals with all the problems (e.g. the safe-guarding of privacy) arising from computer

technology, would provide the optimal legal protection for the computer programme and the computer technology field.

The combination of a code of law, providing protection from all the problems arising out of the advent of computer technology, and the integration of industry structures, allowing the harnessing of resources and the development and marketing of innovative products, will provide Australia with the base it desperately requires in its attempt to become the 'clever country'.

Introduction

Information technology has been also described as the 'electronic estate' or the 'fourth estate'.¹ The fourth estate's rapid growth 'supplements the declining primary (agricultural), secondary (manufacturing) and tertiary (service) sectors of the economy'.² The growth of this new estate has, either directly or indirectly, had a corresponding impact on every aspect of the law.

The most important element of information technology is the computer programme. It is the device that allows a computer to adapt to differing environments and circum-

stances. As such, it is the life blood of this remarkable tool. A computer programme may be described as the device that directs, via a form of machine readable language, the computer to convert inputted data in a certain way to achieve a desired object.³ It is analogous to the pilot of a plane; the pilot operating the plane in such a manner that it is enabled to fly to a certain destination.

The advent of the computer programme has made a large impact on the law and its legal protection continues to be an area of heated debate. It is the purpose of this document to determine what legal protection should be given to the computer programme and whether the current law, covering this field, is adequate in providing such protection both today and in the future.

What the legal protection given to a computer programme should be and whether the current law in this respect is adequate are subjective questions and, being such, their answers depend on the respondent's interest in computer programmes. In answering these questions, this document will analyse the state of the current law, determine its adequacy in relation to the basic interest groups and, on the basis of this determination, advance a proposal of what the legal protection should be.

The Current Law

Introduction

'It is an oft-repeated truism that the law lags behind technology. What is more rarely stated is that this does not usually matter.'⁴ For example, the law in respect of trade marks 'sits as comfortably upon the sixth generation computer as it ever did upon the child's abacus'.⁵ 'There are, however, some areas of law in

which modern science and technology pose new questions and require new applications.'⁶ One such area is the protection of computer programmes.

The legal protection of computer programmes necessarily encompasses two areas; the protection of programmes from piracy and the protection of the integrity of programmes from viruses. This document will be concerned with the protection of programmes from piracy.

From the outset, there is a need to distinguish two types of pirate. The first is an owner of a programme, who makes an illicit copy of the programme for himself or for a friend. The second is a person who intends to sell copies⁷, of the program, to the public as his own product. While the law's intent is to encompass both types of piracy, its enforcement is primarily concerned with the second form of piracy. As a result, this document will emphasise the law in relation to such piracy.

Copyright Law

Introduction

Although there is now a recognised field of law covering computer technology, the legislatures and judiciaries of the world continue, rather unfortunately, to try to encompass computer technology within the more traditional boundaries of the law. Perhaps, considering that such technology has been incorporated into every aspect of modern life, a more sensible approach would have been to extend the boundaries of the law and create a separate head of law dealing solely with such technology.

Prior to 1983, in Australia, it had been generally assumed that, within

the traditional boundaries of the law, the head of copyright was the primary and most appropriate form of law to protect the computer programme.⁸

The Elements of Copyright

Copyright has certain eligibility criteria and will only apply its protection when such criteria are present:

(a) Defined Works

Copyright is not applicable to ideas, it is available only to 'works'. In other words, copyright only applies to protect an expression of an idea (the 'work') and does not protect the idea in itself. Thus, if there is a merger of idea and expression copyright cannot apply.

The applicability of copyright is further limited to defined forms of works. Those forms are literary, dramatic, musical or artistic works. 'Since copyright protection is conferred in terms of a work's form, not its content, the law has to pigeon-hole each new species of oeuvre within existing categories or concede that they are unprotectable'.⁹ The category argued to be the most appropriate for computer programmes is that of the 'literary work'.

(b) Originality

Copyright is only applicable to works that are original.¹⁰ 'Original' is defined to mean that 'the author is the originator, not that the concepts contained therein are novel.'¹¹ A work will demonstrate originality, when it required skill, labour and judgement to create.

(c) Infringing Copy

Copyright will only protect a work against an 'infringing copy'. An infringing copy of a work is a substantial reproduction or an outright

Prize Winning Essay

duplication of the work itself. 'The notion of reproduction, for the purposes of copyright law, involves two elements - resemblance to, and actual use of, the copyright work, or [in other words] "a sufficient degree of objective similarity between the two works" and "some casual connection between the plaintiffs' and the defendants"; work.'¹²

Copyright Protection in Australia

Prior to the *Apple* litigation, it was the public's general assumption that copyright, as conveyed by the *Copyright Act*, 1968 (Cth), conferred protection upon the computer programme, as a literary work. In late 1983, as a result of the decision in *Apple* at trial, this myth was displaced as incorrect, and serious questions were raised as to the extent of protection offered by copyright law.

In *Apple Computer Inc. v Computer Edge Pty. Ltd.*¹³, the High Court of Australia decided that computer programmes were not literary works and, as such, were not the proper subject of copyright protection.¹⁴ This decision needs to be qualified, as the court actually found the source code of a programme to be copyrightable as a literary work, but not the object code. However, as it is the object code that actually operates a computer, the true effect of the decision was that a computer programme was not copyrightable. (The *Apple* litigation is set out in Appendix A).

'Even before the High Court heard the appeal in the *Apple* case, the furore caused by Beaumont J's judgement at first instance [that a computer programme, in both source and object codes, was not the proper subject of copyright] prompted the Federal government to legislate to amend the effect of the decision.'¹⁵

As a result, the *Copyright Amendment Act*, 1984 (Cth), came into force on the fifteenth of June, 1984.

The amendments made, to the principal Act, were, in the main, designed to bring the computer programme within the confines of the definition of 'literary work', rather than to create a separate category of copyrightable work.¹⁶ As such, the principal amendments were made to the interpretation section (section 10(1)), by redefining the meanings of 'literary work', 'adaptation' and 'material form' and introducing a definition of computer programme, and not to the substantive protection provisions. (These amendments are set out in Appendix B).

'Other amendments to the Act involve a presumption to permit the making of a back-up copy of the program¹⁷, a redefinition of "infringing copy of a work" to include a copy of an adaptation of the work¹⁸, a redefinition of "distribution"¹⁹ and [a] new offence prohibiting advertisements for the supply of infringing copies of programs^{20, 21}

The amending Act's 'provisions were, from their inception, regarded as short term and unsatisfactory. Doubts have been expressed about the effectiveness of the amendments in ensuring that all computer programs now have copyright protection.'²² As a result, 'in October 1988, the Copyright Law Review Committee was asked to inquire into copyright protection of software and report upon whether the amendments adequately and appropriately protect computer programs in human (source code) and machine (object code) readable forms, works created by or with the assistance of computer programs²³, and works stored in computer memory.'²⁴ For the moment, however, the *Copyright Act*, 1968 (Cth), as amended by the

1984 amending Act, remains the current legislation regulating copyright protection for computer programmes.

'In 1989 the definition of "computer program" was considered for the first time in the Federal Court in the *Autodesk* case.'²⁵ Prior to this litigation, the computer technology industry had assumed that the 1984 amendments had conferred copyright protection on all computer programmes. The decision of the Full Court of the Federal Court displaced this assumption and caused an outcry similar to that caused by the *Apple* case.

Though the decision was ultimately reversed by the High Court, delivering the landmark judgement on the eleventh of February, 1992, on appeal, the industry continues to call for reform. It wishes to ensure that *all* computer programmes are, without any doubt, protected by copyright legislation. In short, the *Apple* and *Autodesk* cases have shattered the industry's confidence in the adequacy of copyright legislation in this area.

In *Autodesk Inc. v Dyason*²⁶, the High Court of Australia interpreted the amended *Copyright Act*, 1968 (Cth), in relation to the protection of computer programmes. The High Court was unanimous in deciding the following:

- (a) 'The obvious legislative intent, to confer *real* [author's emphasis] protection on the actual "set of instructions" regardless of whether they were expressed in written form or embedded or stored in non-sensate form, was not to be frustrated by reading the 1984 amendments as merely recognising copyright in a particular existing "expression" or description of the relevant "set

Prize Winning Essay

of instructions" in some "language, code or notation."²⁷

(b) 'The definition of "computer program", read in its context, is to be understood as conferring protection on a set of instructions itself, but... doing so in [a] way that is adapted to the nature of copyright. On that basis, the test of originality is satisfied by the originality of the set of instructions and any unauthorised expression of it in language, code or notation will infringe the copyright in the "computer program";²⁸

(c) The infringement of copyright may occur even when a programme is indirectly copied by mechanical means (ie, reverse engineering involving the copying of circuit layouts on a ROM or the use of an oscilloscope); and

(d) 'It is not necessary that the reproduction of a substantial part of a computer programme should, itself, be a computer programme, within the meaning of the definition of "computer program" in the Act.'²⁹

This decision's significance lies in the High Court's intention to interpret the amended legislation broadly, upon the basis of the mischief the legislature was attempting to cure, and its rejection of any legal validity of reverse engineering techniques designed to avoid the protection of the Act. It also affirms that the form of embodying an expression (ie, a ROM or EPROM) is not relevant to the question of infringement; the only relevant question being whether the set of instructions, in any language, code or notation, has been substantially reproduced. (The facts, and High Court decision, of *Autodesk* are set out in Appendix C).

Copyright Remedies

The remedies available for breach of copyright are an account of profits, damages (including exemplary damages) and an injunction.

Alternative Forms of Protection

(a) Patent Law

Although patent law is applicable to hardware devices, such as the computer itself and ROMs, the Australian Patent Office has denied patentability to computer programmes.³⁰

*(b) The Circuit Layouts Act, 1989 (Cth)*³¹

In 1984, the U.S.A. passed the *Semiconductor Chip Protection Act, 1984* (U.S.), which provided that the Act would not protect foreign chips in the U.S.A. until reciprocal legislation was made in other countries. As a result, Australia passed similar legislation in May 1989, which is proclaimed to take effect on the first day of October 1990.

The *Circuit Layout Act, (Cth)*, supplements the copyright legislation by providing 'sui generis' copyright-style protection for integrated circuits/semiconductor chips.³² 'In a way, the ... Act protects computer code as circuitry, including, therefore, code fixed in ROM chips.'³³ In other words, it 'addresses part of the problem referred to by Gibbs C.J.³⁴, in commenting that copying electronic circuitry may not be caught by the 1984 Copyright Act amendments, but only where the layout is in an integrated circuit (silicon chip) rather than stored on floppy disk (s.5).'³⁵

Section 5, of the Act, defines a 'circuit layout' to be a plan comprising a two-dimensional representation, fixed in any material form, of the

three-dimensional section of the active and passive elements and interconnections making up an integrated circuit.

Other key provisions of the Act include a protection period of at least ten years (s.5), a definition of 'original' (s.11), and, unlike copyright, the allowance of reverse engineering (s.23).

(c) Contract Law

The general contractual principles of the law apply to licensing agreements.

The law of trade secret is also encompassed by the law of contract. This law involves a contractual agreement between employer and employee, whereby the employee covenants not to use for himself or to provide to third parties confidential information. The contract may cover the period after an employee leaves a company, as well as the period during which he worked for the company. This law seems to go further than copyright in protecting computer programmes as it covers any secret, including ideas and algorithms.

Adequacy

Introduction

While the High Court's decision in the *Autodesk* case has broadened the scope of protection for computer programmes, the simple answer to whether the current law is adequate, in providing protection, remains as no. In a commercial sense, the information technology sector just does not have confidence in the law as a provider of protection.³⁶

Copyright Protection

The problems with copyright law are immense the world round. The

Prize Winning Essay

problems range from purely theoretical (ie., whether the storage of a programme into the RAM of a computer, to allow its use, constitutes an infringement?)³⁷ to the real.

Many of the real, and therefore economic, problems stem from the fact that copyright differs from nation to nation. Differences are to be found in the scope of the protection offered by both legislation³⁸, including the protection period³⁹, and judicial decision. The result of such differences is that, although the computer programme has universal applicability, its protection has not.

Other problems stem from industry grievances. For example, Autodesk is at the forefront of lobbying groups pressuring the C.L.R.C. to submit to the legislature a proposal that the law be changed to prevent the removal or circumvention of devices designed to prevent copying.⁴⁰

The Alternative Forms of Protection

Another problem with the current law, in providing adequate protection, is that it is to be found under many different areas of the law.⁴¹ Often such applications conflict and only go to make the law more uncertain.

The American Way

The U.S.A. has, by far, the most far-reaching laws relating to the protection of computer programmes. Such laws, in the main, have been extended by judicial decision.

(a) The 'Look and Feel' Approach to Copyright

'One of the factors which determines the market success of a computer system is a favourable proprietary user interface. Once users have mastered one way of coping with a com-

puter they may be loath to change, but it is exactly this "look and feel" or sequence, structure and organisation of the original programme which is likely to be copied by competitors. "Infringers" say they only take the *idea* (author's emphasis) of a program, but do not copy the program itself, relying on the *idea/expression* dichotomy to render their activities legal.⁴²

In the U.S.A., a series of case decisions⁴³ have resulted in conferring 'look and feel' protection on the computer programme. The protection extends to the computer programme's user interface and, thus, any visual similarity in another programme will cause an infringement to arise. The question of whether there is an absence of copying from either the source or object code is not relevant.

The U.S. courts have stressed that they are not extending the law of copyright to cover ideas per se. Yet their reasons in distinguishing ideas from expression, when utilising the 'look and feel' approach, are at best superficial (ie. not real).

(b) The Patentability of Algorithms

The U.S. has also made significant inroads into the traditional bases of patent law, by allowing patent protection for algorithms. An algorithm is usually no more than an abstract mathematical formula, often such formula represents an idea for a computer programme, and as such is not patentable. But in the U.S., the courts have held such algorithms patentable when they may give rise to the future implementation of a process or apparatus.⁴⁴

(c) Summary

The need for 'look and feel' protection of interfaces and the

patentability of algorithms (e.g. an idea for a computer programme) reflects the value of ideas to commercial enterprises.

However, while the attempts to modify the existing law, to give ideas protection, are much needed, the attempts are poorly reasoned. A better approach would have been to create new legislation covering the topic of ideas; rather than to continue to distort traditional laws.

The Interest Groups

Adequacy of the current law is a subjective question and must be looked at from the point of view of different interest groups; each of which believe that differing degrees of protection are required.

There are five interest groups.⁴⁵ The first is the software companies. Their interests dictate that only the maximum protection is adequate. Programmers, on the other hand, wish to have free access to new ideas, but wish for recognition in creating computer programmes. As such, they would like protection to be at about the current level. Users wish to have no policies. However, they wish for innovation in the long term and realise that some protection is required to ensure this. The public at large wishes to have minimal protection, so as to ensure the spread of information. They also wish to have access to source codes used in the construction of large-scale public works, so as to ensure the safety of the codes, in relation to such works as bridges. Lastly, the government would like to have maximum protection for domestically produced programmes and minimal protection for other programmes.⁴⁶

What Legal Protection Should be Given

The law, in Australia, as it stands at present could be argued to be adequate. However, in light of the government's 'clever country' policy, its adequacy in the future is doubted.

The 'clever country' policy needs to have a strong legal protection base for software manufacturers; so as to entice investment in computer technology in the first place. It also needs to be centrally controlled, in order to allow co-ordination of efforts in the country's interest. As such, the author proposes a code of law be drafted to cover the information technology field, with a view to the implementation of the government's policy.

An integral part of the code would then be devoted to the protection of computer programmes:

1. Foreign computer programmes will not be allowed protection until reciprocal laws are passed in other nations. [An attempt to create an international code].
2. Eligible programmes will be protected for a period of five years. [Programmes are usually obsolete by this time and, as such, should not be allowed to stifle further developments].
3. The definition of 'computer programme' will encompass all aspects in its creation from the idea to the expression. [This recognises the great commercial value of ideas].
4. A register will be maintained and will allow the public to examine the registered source codes for a fee. [This will ensure the dissemination of knowledge].
5. A compulsory licensing arrangement will be provided. The par-

ties involved must, firstly, attempt a settlement on their own. However, a licensing board will determine a fair price and terms, in situations of disagreement. [This ensures that innovation is continued, a fair return on investment is available to the creator of the programme and encourages fair play in place of piracy].

6. The controlling legislation should be worded broadly; so as to allow broad interpretations, by the courts, that can keep up with dynamic developments in the industry.
7. A council shall be constituted by members of the law and the industry, to make recommendations [on a six monthly basis] as to amendments.

Such protection of computer programmes represents a trade-off between the interests of the five groups mentioned above. It will encourage legitimate practice and should alleviate any doubt as to the protection of any programme. Further, it will provide, with the other provisions of the code, a strong base for Australia to develop its 'clever country policy'.

APPENDIX A

APPLE COMPUTER INC. v COMPUTER EDGE PTY. LTD.

The Factual Background

Apple Computer Inc. sought an injunction, damages and an account of profits against Computer Edge Pty Ltd. for infringement of the plaintiff's copyright in two computer programmes under sections 37 and 38 of the *Copyright Act*, 1968 (Cth).

Apple alleged that the defendants were infringing its copyright in two computer programmes, namely the Applesoft and Autostart programmes, by importing into Australia (the alleged section 37 infringement), from Taiwan, and selling (the alleged section 38 infringement) a computer, namely the 'Wombat' computer, which allegedly infringed the plaintiff's copyright by incorporating programmes substantially copied from those of plaintiff.

The Decision at First Instance

Beaumont J. of the Federal Court held, at trial, that neither of the Apple programmes, either in source or object code, was a 'literary work' for the purposes of the substantive protection provision, section 31(1), and thus, they were not protected by copyright.

Beaumont J. based his decision on a definition of 'literary work' proposed in *Hollinrake v Truswell* [1894] 3 Ch. 420 at 428. In that case Davey J. stated that 'a literary work is intended to afford either information and instruction, or pleasure, in the form of literary enjoyment'. Beaumont J. held that a source code did not fulfil this definition, as it was 'something which is merely intended to assist the functioning of a mechanical device'. The trial judge also held that 'the position is even stronger in the case of the object programme' as 'this type of programme... is at a more advanced stage of the process of controlling the sequence of operations carried out by a computer'.

The Decision on Appeal to the Full Federal Court

On appeal to the Full Court of the Federal Court, the decision at first instance was reversed. The court

Prize Winning Essay

was unanimous in holding that the source codes of the Apple programmes were protected, as 'literary works', by the *Copyright Act, 1968*, within section 31(1) and held by majority that the Apple object codes were also protected as 'adaptations' of the source codes, since they could be viewed as 'translations', within section 31(1)(a)(vi) of the *Copyright Act, 1968*.

In holding that the source codes were 'literary works', Fox J. stated that the trial judge had erred in applying the definition of Davey J. Fox J. held that such definition 'is not, nor was it intended to be, exhaustive'.

The court (constituted by Fox, Lockhart and Sheppard JJ.) held that the source codes to be 'literary works', because they were in 'writing'. It was irrelevant that the source codes were written in computer language (ie. in writing in an assembly language), as this was still a 'language plainly intelligible to people familiar with it or skilled in its use'. Having found the source codes to be 'literary works', the Court further held them to be the proper subject of copyright protection as they involved sufficient skill, labour and experience on the part of the authors to satisfy the requirement of originality within section 32 of the Act.

The majority of the court (Fox and Lockhart JJ., Sheppard J. dissenting) further held that the object codes were protected as adaptations of the source codes within section 31(1)(a)(vi) of the *Copyright Act, 1968*.

An 'adaptation', in relation to a 'literary work', is defined in section 10(1)(c)(i) of the Act to mean 'a translation of the work'. Fox J., in reaching his judgement, referred to a passage, in the 1979 Report of the United States National Commission

on New Technological Uses of Copyright Works, which stated that 'an object code is the version of a program in which the source code language is converted or translated into the machine language of the computer with which it is to be used'. Fox J. agreed with such persuasive authority and stated that 'the object codes contained in Apple ROMS are a straightforward electronic translation into a material form of the source codes, and it would be entirely within ordinary understanding to say that they are translations of the source codes'.

The majority, having held that the object codes were protected as 'adaptations', found it unnecessary to decide whether the object codes were 'literary works' in themselves.

The Decision on Appeal to the High Court

On appeal to the High Court, the decision of the Full Court of the Federal Court was reversed and the orders of the trial judge restored. The majority of the court (Gibbs C.J., Mason, Wilson and Brennan JJ., Deane J. not deciding), in agreeing with the Full Court of the Federal Court, held that the source codes of the Apple programmes were protected, as 'literary works', by section 31(1) of the *Copyright Act, 1968*. However, contrary to the decision of the majority of the full Court of the Federal Court, a different majority of the court (Gibbs C.J., Brennan and Deane JJ., Mason and Wilson JJ. dissenting) held that the Apple object codes were not protected by the Act, as they could not be said to be 'adaptations', within the definition of section 10(1) of the act, of the source codes. Gibbs C.J. and Brennan J. (Mason and Wilson JJ. dissenting) further holding that the object codes were not 'literary works' in themselves.

The majority of the court held that the source codes of the Apple programmes were original 'literary works' for much the same reasons as the Full Court of the Federal Court. Gibbs C.J. further holding that the source codes satisfy the definition of a 'literary work' laid down by Davey J. and used by the trial judge in his decision. He stated that 'the source programs satisfy this test, they afford instruction to the operator keying in the machine that will convert the source code the object code'.

The majority of the court held that the object codes were not 'adaptations' of the source codes. Gibbs C.J. holding that it was not an 'adaptation', within section 10(1)(c)(i) of the Act, as a 'translation' meant the action or process of turning from one language into another and not the expression or rendering of something in another form or medium (e.g. electrical impulses). Gibbs C.J., with Deane J., further held that the electrical impulses that constitute the object codes 'effectuate, but do not translate' the instructions in the source codes.

Gibbs C.J. and Brennan J. held, in any event, that section 31(1)(a)(vii) of the Act requires that the 'adaptation' itself, be a 'literary work' and found that the object codes, not being embodied in 'writing', did not fall within such definition. On the contrary, they were said to be embodied in a sequence of electrical impulses, 'which cannot be perceived by the senses and are not intended to convey any message to a human being and which do not represent words, letters, figures or symbols...'

The majority of the court (Gibbs C.J., Brennan and Deane JJ., Mason and Wilson JJ. dissenting) held that the Wombat object codes were not 'reproductions' of the Apple source codes. Gibbs C.J. and Brennan J. held that the notion of

Prize Winning Essay

'reproduction' involved two elements; firstly, that the infringing work must sufficiently resemble, resemblance requiring a degree of objective similarity, the copyright work and, secondly, that it was produced by the use of the copyright work. Gibbs C.J. held that 'it is impossible to say that there is any objective similarity between [the Wombat object codes and the Apple source codes as] the electrical impulses [which constitute the Wombat object codes, do not have] the slightest resemblance to the written source codes'.

It was accordingly held, by the majority of the court (Gibbs C.J., Brennan and Deane JJ., Mason and Wilson JJ. dissenting), that no infringement of copyright was committed. Gibbs C.J. stating that 'it may be regretted that the respondents [Apple Computer Inc.] have no remedy in copyright against the appellants [Computer Edge Pty. Ltd.] who pirated their programs'.

Appendix B

The Aftermath of the Apple Case: The Copyright Amendment Act, 1984 (Cth)

The amending Act provides that 'whilst the amendments extend to works in existence prior to the commencement of the Act, copies of those programmes made prior to the commencement will not be regarded as an infringement'. As a result of the decision in the *Apple* case, this provision effectively means that 'applicants for Injunctions to restrain infringements of Copyright in computer software will be virtually concerned to determine the date on which the copy was made'.

The principal amendments made to section 10(1) were as follows:

'Computer program' means an expression, in any language, code or notation, of a set of instructions (whether with or without related information) intended, either directly or after either or both of the following:

- (a) conversion to another language, code or notation;
- (b) reproduction in a different material form;

to cause a device having digital information processing capabilities to perform a particular function.

'Literary work' includes:

...

- (b) a computer program or compilation of computer programs.

'Adaptation' means:

...

(ba) in relation to a literary work being a computer program - a version of the work (whether or not in the language, code or notation in which the work was originally expressed) not being a reproduction of the work.

'Material form', in relation to a work or an adaptation of a work, includes any form (whether visible or not) of storage from which the work or adaptation, or a substantial part of the work or adaptation, can be reproduced.

Appendix C

Autodesk Inc v Dyason

The Factual Background

The first plaintiff was a Californian company, Autodesk Inc., that owned

the copyright in the computer programme 'AutoCAD'. The second plaintiff, Autodesk Australia Pty. Ltd., was a wholly-owned subsidiary and the exclusive licensee, in Australia, of Autodesk Inc.

The AutoCAD programme enables a user to produce drawings which assist in the drafting of architectural and engineering plans and designs. The letters 'CAD' in AutoCAD stand for computer assisted drafting. AutoCAD is sold by dealers. The purchasers receive a package including a number of disks which contain software in the form of the drafting programme. It is easy to make copies of these disks. As these disks are easily copied, there is a danger that persons who have not purchased the disks from an AutoCAD dealer may pirate them by making unauthorised copies. To avoid piracy of this kind, the plaintiffs developed a hardware device, called an 'AutoCAD lock', without which the AutoCAD programme cannot be run. The lock is plugged into the computer, and peripheral devices are in turn plugged into the lock. Without the lock in place the computer will not run the AutoCAD programme, although other programmes may be run with the lock in place. A single lock is supplied with each purchase of the AutoCAD package and cannot be purchased separately.

The hardware lock functions via the use of a shift register, and contains a particular sequence of digits, and a XOR. The AutoCAD programme, through the 'Widget C' programme (one of the compilation of programmes that make up the AutoCAD programme), requires the computer to periodically 'challenge' the hardware lock. The hardware lock 'an-

Prize Winning Essay

swers' by sending a response based on its particular sequence of digits. The Widget C programme then utilises a look-up table to ascertain the correct response, compares it with the answer received from the hardware lock and if, and only if, the two correspond, it allows the AutoCAD programme to continue running.

The third defendant ran the AutoCAD programme on a computer and used an oscilloscope to observe the electronic signals passing from the computer to the lock and from the lock to the computer. He did not dissect the internal electronics of the AutoCAD lock or the program structure of Widget C. With the result of his observations he created the 'Auto-Key lock'.

The third defendant, in creating the Auto-Key lock, chose to utilise an EPROM to serve as a storage device for the same set of digits as those of the AutoCAD lock. This EPROM was then wired in such a way that it, in effect, operated as a look-up table. Such look-up table would produce the same reading as the Widget C look-up table when read in a manner adopted by Widget C. The result, of such wiring and storage in relation to the EPROM, was the Auto-Key lock; a device that would perform the same function as the hardware lock.

The first and second defendants aided the third defendant in producing and marketing his Auto-Key lock. At all times, the defendants went to a great deal of trouble to conceal their identities.

Autodesk Inc. brought an action against the defendants, alleging that they were infringing its copyright in the Autodesk programme by creating, producing and marketing their Auto-Key lock.

The decision at first instance upheld Autodesk's claim. This decision was subsequently overturned by the Full Court of the Federal Court. Autodesk appealed to the High Court.

The High Court of Australia restored the orders of the trial judge. The High Court was unanimous in deciding the following; (Dawson J. delivering the major judgment of the Court)

- (a) 'The obvious legislative intent, to confer real protection on the actual "set of instructions" regardless of whether they were expressed in written form or embedded or stored in a non-sensate form, was not to be frustrated by reading the 1984 amendments as merely recognising copyright in a particular existing "expression" or description of the relevant "set of instructions" in some "language, code or notation";
- (b) 'The definition of "computer program", read in its context, is to be understood as conferring protection on a set of instructions itself, but... doing so in [a] way that is adapted to the nature of copyright. On that basis, the test of originality is satisfied by the originality of the set of instructions and any unauthorised expression of it in language, code or notation will infringe the copyright in the "computer program".';
- (c) The infringement of copyright may occur even when a programme is indirectly copied by mechanical means (ie., reverse engineering involving the copyright of circuit layouts on a ROM or the use of an oscilloscope); and

- (d) 'It is not necessary that the reproduction of a substantial part of a computer programme should, itself, be a computer programme, within the meaning of the definition of "computer program" in the Act.'

As a result of these decisions, the High Court upheld the appeal; finding that Autodesk's copyright, in AutoCAD, had been infringed by a substantial reproduction of a subsidiary programme (namely Widget C).

Darren C. Ho is a student at the Queensland University of Technology and is enrolled in the Bachelor of Business/Bachelor of Law degree course.

Bibliography

- Borking J.J. *Third Party Protection of Software and Firmware* Netherlands: Elsevier Science Publishers BV, 1985.
- Davis M. *Intellectual Property* U.S.A.: Miller & Davis, 1990.
- Hughes G.L. "Licensing, Developing and Protecting Software" *Queensland Law Society Journal* [1984] 268.
- Ingalsbe L. *Business Applications Software* U.S.A.: Merrill Publishing Co., 1988.
- Lane V.P. *Security of Computer Based Information Systems* Hong Kong: Macmillan, 1990.
- McKeough J. and A. Stewart. *Intellectual Property in Australia* Australia: Butterworths, 1992.
- Phillips J. *Introduction to Intellectual Property Law* U.K.: Butterworths, 1986.

Footnotes

- ¹ McKeough J. and A. Stewart. *Intellectual Property in Australia* (Australia, 1992) 169.
- ² Ibid.
- ³ Ingalsbe L. *Business Applications Software* (U.S.A., 1988) 8.
- ⁴ Phillips J. *Introduction to Intellectual Property Law* (U.K., 1986) 251.
- ⁵ Ibid.
- ⁶ Ibid.
- ⁷ "Copies" meaning here either direct or substantial reproductions of the original.
- ⁸ McKeough and Stewart. *Op. cit.* 170.
- ⁹ Phillips J. *Op. cit.* 252.
- ¹⁰ Section 32 of the *Copyright Act*, 1968 (Cth).
- ¹¹ Lane V.P. *Security of Computer Based Information Systems* (Hong Kong, 1990) 146.

Continued on page 46 