Copyright Law and Intellectual Property Law for Programmers

Software Protection – A Programmer’s View

There is no defined legal meaning of software in the UK. The term used in UK law is ‘computer program’, and it encompasses materials and items that go to the execution of a computer program and excludes hardware. It includes firmware, as the software simply resides on a hardware device, which is a mere difference in the form of the software. Preparatory design materials such as functional specifications are also protected as software.

With so many different aspects to software, the protection of software draws on many different areas of law. Protection of source code as a copyright literary work was specifically introduced in the UK in 1992, however the ways and means to protect software extend further than this. The foundations for software protection lay directly and indirectly by contract, copyright, designs law, patent law, trade marks, passing off, law of confidence and trade secrets.

What is Protected and How?

Intellectual property rights do not protect ideas. It protects the embodiment of ideas in their expressed, recorded or implemented form. For computer software this means copyright protects source code in the way that it appears on a hardcopy, and in its compiled forms. Intellectual property rights do not protect ideas unless they 1. are confidential and 2. remain confidential. Confidential information will protect information in all its forms, spoken, written or recorded by some other means.

As copyright is qualified monopoly – it does not protect all works for all purposes - copyright will not protect algorithms used and mathematical calculations used in source code. The rationale for this is that a copyright owner does not own the facts or ideas expressed in the work, only the particular way they are expressed, or written down.

Intellectual property rights are protected by contract with users. These will be familiar, as in the industry they are referred to as software licences. Licences of intellectual property rights is incredibly flexible, and in essence they are simply permissions to use software subject conditions. The conditions for the use of software rely on the context of the licence. In commercial software licences, the licence will be granted in exchange for a payment of money, and may be limited in any number of ways. For instance the licensee may only be permitted to use one copy of the licence, or the use of the licence may be limited by the territory. The permission used in open source licensing is granted on condition of the principles espoused by the Free Software Foundation.

The best way to protect software is to only release copies of the software in an obfuscated compiled form.

Designs law protects the appearance of physical articles, however designs law in the UK has been extended to allow registered design protection for icons and other designs that appear on a computer screen.

Areas of Law Protecting Software
Copyright – copyright protects the skill and judgment invested in creating a work, and others may copy the functionality provided they do not copy the original program. In this way, copyright does not protect functionality in its own right.

It is trite to say that constantly developed software attracts perpetual copyright protection. Variations of source code may amount to ‘adaptations’ of the original namely variations of the source code in language and coding methodology.

There have been a line of cases where claimants have claimed that the look and feel of users interfaces displayed by software has been infringed. UK Court have are inclined to make a finding that copyright ahs been infringed when it occurs on an abstract level, as it would be unfair on the public, as there must be a degree of certainty of what will infringe and what will not. This reasoning pervades judgments involving other types of copyright works, such as the decision in the case Da Vinci Case.

Lawful users of software are entitled to perform certain activities on third parties’ software. They may backup the software, both decompile and reverse engineer software for specific purposes (that is to study the ideas contained in the source code, or create other software that interfaces with the original software), and edit software for the purpose of correcting errors.

Patents – provided the software steers clear of the exclusions to patentability, patent law will protect the method that the software uses to perform the process. The protection lasts for 20 years. Protection is more easily obtained in the US, as business methods are patentable, whereas in the UK business methods are specifically excluded. The trade off with the expense involved is the marked strength of protection granted.

In order to obtain a patent for software, an invention must be new, inventive, have an industrial application and not fall into excluded subject matter. Excluded subject matter are scientific theories, mathematical methods, rules or scheme of performing a mental act, methods of doing business and the presentation of information and computer program.

Difficulties are experienced by applicants for software patents because software needs something extra: a technical effect. It is the technical effect produced by the software that is patentable, and not the software itself.

A technical effect or ‘contribution’ in the physical domain drags the invention out of the reach of the excluded subject matter. Some tangible end result is required that makes an advance: the effect does not have to be in the physical domain. It is the application that is performed by the software that is protected by patent law, and not computer programs themselves. The focus therefore is on the process performed by the software.

In Viacom, software processed images to produce better quality images. The technical effect in this case was the production of the images. It was not the program that was patented, but the process implemented by the program. This is also an instance of an algorithm being indirectly patentable. Algorithms of themselves are not patentable as they are mathematical methods and excluded by s 1(2) of the Patents Act. However a method that implements to the algorithm in a particular patented process patents that algorithm for the process.
As a matter of substance, of all that is being performed is one of the defined exclusions under section 1(2), then it is still unprotectable. *The test relies therefore on what the invention does as opposed to the manner in which the invention accomplishes the task.* Patents have been obtained for software that processes images to produce better quality images; drawings of better curves on a computer screen; manufacturing control processes; and operating system monitoring software.

A demonstrative link between the computer program and the process in a physical domain was required rather than that of an electronic calculation dictated by the laws of physics and mathematics which controlled the machine in the physical world.

Computer programs, mathematical methods, discoveries, schemes, rules or methods for performing mental acts and methods for presentation of information are excluded from patentability to the extent that they do not have an impact in the real world. In effect for software, the computer program cannot be claimed on its own – there must be a ‘technical effect’. The program must facilitate some other process, rather than embody the process itself.

*Designs* – provides an indirect means to protect firmware and a direct means to protect icons.

*Trade mark law and passing off* - protects the name that is used to refer to the software in industry. Trade mark law is generally a more cost-effective means of protecting the trade name.

*Confidential Information* – protects business and commercial information. Where source code or design materials have had their confidentiality maintained, they are protected.

*Trade Secrets* - computer software is generally considered to be trade secrets and thus ex-employees are unable to use the ideas. Trade secrets do not protect broad or general ideas. Trade Secrets can include secret formulae, names of customers and the services that they buy.

The way software works is usually considered a trade secret, which is an elevated form of confidential information.

Some of these intellectual property rights frequently overlap in the protection of computer software. For instance, the way proprietary software works to perform a task is likely to be considered trade secret, as well as being protected by copyright. If a patent has been obtained, copyright protection will be maintained in the source code and machine code derived from the source code, however once the patent has been published, the way the software works will lose its status as a trade secret to the extent that it is disclosed in the patent specification.

**Ownership**

In the absence of an agreement to the contrary, the first owner of the copyright in software is the person to made it, unless that person is employed, in which case the employer owns it. Freelance programmers and consultants therefore own the copyright in the code that they write unless special circumstances apply.

**Licensing**
A fundamental precept of intellectual property law is a licence. A licence is simply a permission to use some embodiment of intellectual property. Where use of software is not embodied within a licence it is an infringement. Depending upon the rights that have been acquired in the software, it may be an infringement of copyright, design rights or patent rights. The knowledge embodied in software may also amount to a trade secret, which is particularly sensitive confidential information.

**Unlawful Use of Software and Infringement**

Copyright is infringed when a person other than the copyright owner or their licensee performs one of the exclusive rights of the copyright owner or authorises another to do so. The exclusive rights are the rights to:

1. copy the work
2. distribute the work
3. rent or lend the work to the public
4. make an adaptation of the work
5. perform any of the foregoing exclusive rights in respect to an adaptation.

So, the copyright owner is entitled to stop anyone from performing these restricted acts without their permission.

Infringement may take place by translating a two dimensional work to a three dimensional work – such as a drawing to a building; making a copy of a published page; and the copying may be incidental or transient, such as running a program – as the software is loaded (copied) into memory to be executed. Also, restructured, altered versions and translations of software also infringe. Communicating the software to public by broadcasting the work or making it available to the public (whether it is actually accessed or not) also infringe copyright. These two are the rights that catch copies emanating from Peer2Peer file sharing networks.

The entire work does not need to be copied to infringe. A ‘substantial part’ of the software only needs to be copied. This a qualitative test rather than a quantitative test – it is the importance of the parts copied rather than the quantity copied. As stated earlier, infringement is avoided if the work is independently created. There is no innocence defence to copyright infringement – it is no excuse to say that one did not know that copyright was owned by someone else.

Secondary Infringement – this is infringement arising from dealing with infringing copies, and take place when a person sells, tries to sell or imports infringing copies. It also includes dealing with articles that are used to make infringing copies.

There is a public policy defence to copyright infringement, whereby a court will refuse to enforce copyright where ordering that an infringement would be contrary to the public interest, for instance in a claim for infringement of software that perpetrated a fraud, piracy or hacking.

**Remedies**
Search orders (previously referred to as Anton Pillar orders) are of particular note, in that copyright owners may obtain an order that entitles them to search and take copies of relevant materials, to avoid the circumstance that they may be readily destroyed, thus defeating a claim to infringement.

An order for damages which takes the form of a monetary payment is the primary means for compensating infringement of copyright works. In English law, additional damages are also available where the infringing party obtains a benefit from the use of the infringing work or the infringer acted with disregard for the copyright owner’s rights. An injunction is usually available to prevent further infringements, in addition to orders for the delivery up of infringing materials.

Quick Tips

1. Rather than taking a chance on thinking that the law of confidence will protect information, enter into non-disclosure agreements that ensure that a contractual right exists to prevent non-disclosure. Doing so makes available damages for breach of contract, which are not available when the confidentiality obligation is implied by law.

2. There is no formal ‘copyrighting’ process in English law. A common means to prove that a copyright work existed at the time a claimant says it does is by producing a self-addressed envelope with a copy of the copyright work enclosed. There are companies that provide such services but are unnecessary provided there is adequate evidence of the creation date.

3. Be clear about the rights that are granted to licensees.

Leigh Ellis is an intellectual property lawyer, copyright lawyer and qualified & experienced software engineer. He advises on protection of computer software and litigation on United Kingdom law. He has advised client in the United States, United Kingdom, China, France and Switzerland.