There are even cases of a distributor reproducing programs in quantity and selling them to other dealers — not as risky as it sounds if the package's suppliers are in another country. These products are therefore equivalent to 'bootleg' copies of well-known rock albums.

Hereafter, the piracy becomes more sophisticated and more difficult to pin down. Someone takes an existing program, for example, makes some modifications to it and markets it as his own. The new version may offer a substantial improvement in performance or additional facilities, or may simply feature a change to the 'credits' displayed when the program is first run, and the layout of information on the screen, in order that the package isn't immediately recognisable. This practice is more common with business programs than games.

Whether this process of modification is software piracy in the same sense as pure copying is arguable, which is why so many people get away with it. Software publishers receive little protection from the law and the existing laws of copyright do not protect programs from piracy or modification. Copyright, it seems, applies only to printed material (with special exceptions for music) and therefore computer programs that are stored only in RAM or on cassette are not covered. As with most legal matters, precedents have to be established and they take time and money.

The most woolly area is where a company take an idea from a popular program, and reproduce their own version of it. Note that they aren't copying any of the program code, they are merely taking accurate note of how the game appears on the screen and reacts to the user's input, and then writing a program from scratch to achieve the same effect. The most noteworthy example of this has been PacMan — the arcade game that started out on coin-operated machines, was made available on Atari's own home computers and Video Cartridge System, and subsequently appeared in different variations from a score of software publishers. Each looked slightly different, but each featured the familiar little creature gobbling his way around the maze. Over a period of months Atari successfully managed to eliminate most of these competitors, either by court action or, in the case of smaller operations, simply with the threat of court action.

Generally, software authors and suppliers have to resort to means outside the legal system to protect their program code and royalties. Some suppliers take the laudable view that if they sell their products cheaply enough, there is less incentive for people to copy. On more sophisticated programs, a well-produced manual and attractive packaging afford some degree of protection.

'User-registration' is one means by which more expensive business software is protected: unless you have returned the card from the owner's manual, you won't be able to obtain help and support on the telephone.

So-called 'hard' methods of protection usually involve a matchbox-sized device, called a 'dongle', which must be plugged into one of the computer's interface ports in order for the program to run. The dongle's circuitry incorporates a short electronic code, usually a pattern of ones and zeros burnt into a ROM. At frequent intervals the applications program addresses the dongle; if it doesn't receive the correct code back it will refuse to continue. The code may well be individual to each dongle, which means that each copy of the package must be matched to the dongle it will be sold with. The only way to make illegal copies is by forging the dongle, or re-writing the program code to remove the sections that refer to the dongle — by no means impossible, but well beyond the capability of most home programmers.

A lot of research has been put into methods of achieving the same protection, without additional hardware. The idea, aptly known as 'water-marking', is to have a magnetic code superimposed on the cassette or disk 'behind' the recording of the program itself, which will not transfer to a copy, so the program won't run on any disk or cassette other than the original.

The only economically viable 'hard' protection for the games suppliers is the ROM cartridge, which generally commands higher prices because it avoids the long loading times of cassettes. Nevertheless, even the cartridge is not impregnable — devices now exist which can copy a cartridge either onto a cassette, or onto a new kind of cartridge that can be programmed or re-programmed by the user.

Software piracy is a cops-and-robbers style battle with the protagonists constantly trying to leapfrog each other in ingenuity. It is unlikely ever to be eliminated; at best it can be made sufficiently costly to be only a marginal activity.

Dongles
These are small hardware devices used to protect certain programs against illicit copying. Such programs will not run unless the correct dongle is plugged into one of the computer's interfaces. The electronics inside are usually encased in solid resin, so it's very difficult to interfere with them

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