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Practical and Legal Protection of Computer Databases

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ABSTRACT

In India, the legalities of computer software are often poorly understood by the programmers, authors, and the software industry. Indian software industry, being one of the top most foreign exchange earners, needs to take a close look and safeguard its market and intellect of its many programmers since computer database is a new type of intellectual property of growing importance in today's world. The Indian software industry has to change its orientation and stress the protection of intellectual property. Only by doing so, there will be a good scope for original product development. The article discusses the practical and legal methods of protecting computer databases from unauthorised copying and use, and areas of trade secrecy and non-disclosure.

Keywords: Software, software industry, legal protection, IPRs, copyright

1. INRODUCTION

Tremendous opportunities and advantages of cybernetics with the phenomenal growth of computer software, Internet, mobile technologies, and digital instrumentation, have arisen serious judicial concerns of techno-legal dimension more specifically in the arena of intellectual property rights (IPR) regime. The net, with the convenience of World Wide Web (www), mass reeling of hypertext transfer protocol (http), and hypertext markup language (html) has become the most efficient distribution mechanism. While the issue of computer software piracy, and copyright violations is itself not a new one, the onset of the digital environment has become the death knell for copyright law, as the jurisprudential foundations and ideological mooring of the copyright, information technology, and cyber laws are juxtaposed to each other in many respects. These juxtapositions, if not seriously address to by the lawmakers and the judiciary ultimately may prove the various IPR and Cyber law enactments an exercise in futility.

Copyright is unique kind of intellectual property right, the importance of which is increasing day by day, and does not fall in the area of industrial property. For enjoying copyright protection, the work must be an original creation. Copyright, was not regarded as being of much relevance to the sale of products other than traditionally artistic products such as books, music compositions, artistic works, literary works, pantomimes motion pictures, and gramophone records. Copyright remains the principle means of preventing others from copying or selling software as well as literary, dramatic, musical or artistic works. The foremost purpose of copyright law is to foster the growth of learning and culture, and the dissemination of information. It is meant to induce the creation of as many works of art, literature, music, and works of authorship (including software) as possible. Copyright law gives authors limited property rights in their works, but only for the ultimate purpose of benefiting the public by encouraging the creation of more works. The purpose of copyright is not to protect the author, but it is to benefit the public. The balance in copyright law is drawn by limiting property rights to the author's particular method of expressing an idea. Copyright never protects the idea, but instead only protects the expression

of the idea. But once the idea has been expressed in tangible form the copyright protection exists for words, literary, and musical works in which it is encompassed.

2. COPYRIGHTS AND COMPUTER PROGRAMMES

Today, however, in addition to the above-mentioned traditional areas, copyright has become an extremely important weapon in preventing piracy of computer software and preventing copying of various useful items to which art has been applied. The protection for software has traditionally been restricted to copyrights. Software can only be copyrighted as a literary work.

Copyright infringement is fairly easy to get away since it can always be claimed that the source codes, algorithms, etc. could be used for different implementations. It necessitated the need for inserting moles of special identities in the software called as "seeds" and "signatures" by the author. The intentional use of "seeds" and "signatures" in a database, when combined with the three main vehicles of legal protection, viz., copyright, trade secrets, and contract can create a powerful defence against the computer pirate.

For the Indian industry, low value-added body shopping and data processing constitute the bulk of the software exports. Handful of software companies in India seriously pursue and secure copyright protection for their software. Out of the rest, some are even unaware that they can secure their works by going in for copyrights and the balance do not seriously pursue the process. There is also one school of thought, which simply thinks that it is not worth pursuing a copyright since enforcing and suing for infringement and damages is a long, and cumbersome legal process.

Globally, very few of the large companies in the world hold a virtual monopoly on operating systems and no one in the industry is really putting up much of a fight against the one or two software giants who hold monopoly and minting millions. The only reason being that these one or two companies have done a phenomenal job protecting themselves and their software products by effectively using the different intellectual property protections available for computer programs including trade secrets, copyrights, and patents.

3. INDIAN COPYRIGHT LAW

The earliest copyright statute in India is the 1847 Act, enacted during the East Indian Company's regime. Not much of information is available about how the Copyright Act operated till 1911. In 1911, Britain codified the Copyright Act of 1911 and made it applicable to India. In 1914, the Indian Copyright Act was enacted, which was a modified version of the 1911 Act. The first Act after independence is the Copyright Act of 1957, which took into consideration the new developments and technological advances and introduced number of changes and new provisions. The Act was further amended in 1983, 1984, 1994, and 1999. The amendment of 1994 brought computer programs within the ambit of the Act. The further amendment in 1999, apart from others, saw the amended definition of the literary works and meaning of copyright in respect of computer programs.

4. WHAT IS A COMPUTER DATABASE?

"What exactly is a computer database?" Essentially, computer database, is a collection of information stored, in hard disk drives, diskettes, tape drives, CD-ROMs, etc. so that it can be selectively searched for retrieving the desired information using a computer. Computer database could be a program used by the computer to run certain applications (like the word processor), or data entered by a person in the computer for purpose of record and reuse, or a image file, etc. With the advancement in information technology, the significance and volume of database products is on the increase. Since this is a relatively new type of property, there is a need to rapidly evolve and create new standards and legal principles to try and protect it against its misuse, theft, unauthorised copying, and use.

Databases have long existed in manual or book form. For example, the telephone book or directory, reference books, and legal reporters which can be termed as manual databases. The computer database is essentially an information compendium like a phone book, which has been placed in a computer and automated. When information is computerised, there are many more ways for the information to be accessed, manipulated, and used; the value of the database to users is thereby greatly enhanced. Some popular examples of computer databases include legal databases such as Lexis, Juris, Westlaw, etc., and various business and scientific databases such as those found on Dialog and Internet.

An automated database can be defined as "a body of facts, data, or other information assembled into an organised format suitable for use in a computer and comprising one or more files". The Indian statutes are yet to specifically list automated databases as

a copyrightable subject matter. For the purpose of copyrights, a computer database can also be defined as a "compilation", which means data formed by the collection and assembling or pre-existing materials or of data that are selected, coordinated or arranged in such a way that the resulting work as a whole constitutes an original work of authorship. Examples of compilation include periodical, anthology and encyclopedia, or a reference work such as a directory, index, map, telephone book, guidebook, law reporter, catalogue, chart, or a racing guide.

5. WHY A DATABASE CAN BE HARD TO LEGALLY PROTECT?

Under traditional concepts of literary copyright, the data contained in a compilation, and the selection of the data, may sometimes not be protected from copying. Only the coordination and arrangement of the database may be protected, and even then there must be some originality to the collection and arrangement for it to be protected. When a database is composed of facts, these facts frequently cannot be copyrighted, for otherwise the public's right to use information in the public domain would be unreasonably limited.

The basic problem in protecting a database is that the information compiled is frequently public knowledge, understandably so since the user has to know how to use the database. Just facts or the data is otherwise not susceptible of ownership by the compiler of the database. For example, a person could call every lawyer or solicitor in the country and ask if they are specialised in computer law. The names and addresses of those who said yes could then be put into a database of computer lawyers. The question is, "Does the person preparing this database own the names and addresses of these lawyers or solicitors? Understandably this would be denied by the concerned lawyers or solicitors. Then what does the person preparing this database own? How can he prevent other from copying and selling as his own? The way the information about lawyers or solicitors is arranged in the database might involve little or no originality. Hence, this aspect of the database might not fall under the caption "copyright" and therefore cannot be sought to be protected.

Since the names and addresses of the advocates or solicitors are not susceptible to ownership, a competitor certainly could call up all of the attorneys in the country and, assuming he got the same answers, come up with the same list. This would unquestionably be fair competition, and the first person who thought of the idea of compiling a list of advocates or solicitors specialising in computer laws would not be able to stop the competitor from coming out with compilation of another list of advocates or solicitors specialising in computer law.

There are essentially three ways to legally protect computer databases: copyright, trade secret, and contract. Ideally, all three of these legal means can be employed, along with practical non-legal methods, to provide the maximum protection against the piracy of the databases. There are, of course, other legal theories propounded in the US, such as unfair competition and conversion, however, these theories may be pre-empted by copyright law. Indian copyright law provides the framework and basic foundation for legal protection by securing for limited time to the authors and inventors the exclusive rights in their respective writings and discoveries.

6. COPYRIGHT LAW

Copyright protects the expression of idea and not the idea itself. Originality requires the author of the specific work to contribute something more than a "merely trivial" variation, which is recognisably "his own." The traditional copyright doctrine envisages, that a work must show some "creativity" in order to meet the originality test, and it is not subject to copyright if the work merely copies an existing work. The work should evolve from the intellect of the author and shall not be altered or edited repetition of any other existing work. This essential element of "creativity" is weak or completely absent in many manual reference works or computer databases. For example, what creativity is there in an alphabetical listing of names in a phone book?

Another basic problem in protecting a database is that copyright law does not prohibit the copying of facts, even newly discovered or expensively acquired facts, nor does it prohibit the copying of ideas. Copyright law can only provide protection to the arrangement and coordination of facts in a database. Even then, there must be some originality to the collection and arrangement for it to be protected.

Typically, the preparation of a database requires a significant expenditure of time, effort and money to cull and select information from various different sources, but little or no original creativity to express the facts, or arrange them. In these circumstances, where the compiler gathers and compiles raw facts, he did not create the facts; he just discovered or uncovered them, sometimes at great expense and trouble. Such was the case in the earlier example of the poor investigator who had to call every advocate or solicitor in the country to see if they practiced

computer law. So how can one prevent copying of the work?

In order to lend copyright protection to merely factual databases, we have to look to the decisions pronounced by American Courts. They moved away from a strict application of the creativity test, and employed the test of "industriousness" or "sweat of the brow". This was attempted in order to test and determine if the database is an "originality" from the "labour and expense" necessary to make the compilation, rather than from any real "creativity' of the author.

Under the "sweat of the brow" doctrine, copyright could prevent the unauthorised copying facts in a database, if the compiler could show that sufficient effort went into the acquisition and selection of the data to make it original. The protection would lie even if the information compiled was public knowledge or otherwise not protected.

The decisions of the American Courts and the above doctrine have to be critically analysed in the Indian legal perspective before any reference is made or guidance taken from.

Indian copyright law more than meeting the World Trade Organisation (WTO) requirements has weak enforcement. And with other problems inherent in copyright protection of a database, contract and trade secret law becomes all the more important to try and prevent the unauthorised copying of factual data from a database.

7. TRADE SECRECY PROTECTION

Secrecy, in the software industry is judged in light of the industry's level of general knowledge, the information's ascertainability, and the offensive of the missappropriator's conduct. Secrecy can be destroyed by insufficient precautions, by the marketing of a product that reveals the secret, or by disclosure in judicial proceedings or to government agencies.

Trade secrete had long been the favourite protection by the software industry. Trade secrets extend to virtually any concrete information, including formulas, data compilations, programs, devices, processes, and customer lists. Thus, trade secret can protect software against the unauthorised use or disclosure by anyone who obtains it through improper means or through a confidential relationship. Secrecy can be divided into two parts: (i) prevention of disclosure to external competitors, and (ii) imposition of confidentiality on one's employees. Most of the software is protected atleast to some extent by trade secrets. Adding trade secrecy protection to a database can provide significantly greater legal rights. Unfortunately the Indian legal system has not seen much development in this sphere of law. Much needs to be done by the Government and the Judiciary in this field of law.

Following are the facts to consider in determining whether particular information is a trade secret or not:

(i) The extent to which the subject information is known outside the business.

(ii) The extent to which it is known to the employees and others involved in the business.

(iii) The extent of measure taken to guard the secrecy of the subject information.

(iv) The amount of money, time, efforts spent by the company to develop the said information.

(v) The value of the subject information to the company and to the competitors.

(vi) The ease or difficulty at which the subject information could be acquired or duplicated by others.

To obtain the trade secret status two important requirements are: (i) the subject information provides a commercial advantage, and (ii) the information is a secret.

Trade secret protection is a viable and useful tool in protecting software because it is immediate protection and can be perpetual. Indian software companies should use this protection to keep their former employees from stealing the work product that rightfully belongs to the company. Additionally, trade secret protection can protect the company again stealing of part/s of the code in violation of an express agreement.

Essentially a trade secret is a knowledge, which a person or company acquires through its own efforts and which has some value to it. Typically, this knowledge is kept secret from competitors because it is felt that this information provides some type of competitive advantage. Trade secret information includes information regarding a formula, pattern, compilation, program, device, method, technique or process. The information should derive independent economic value, actual or potential, not being generally known to and not being readily ascertainable by proper means by other persons who can obtain economic value from its disclosure or use; and is the subject of effort that reasonably warrants under the circumstances to maintain its secrecy.

Since a computer database is a compilation, which derives economic value, it is a type of intellectual property, which requires trade secrecy protection. The common legal devise for implementing the principle of trade secret is the non-disclosure and secrecy agreement. It is a common practice with the Indian companies to take a declaration or enter into a non-disclosure and secrecy agreement with its employees. Once having signed this the employee is obliged to keep as a secret the knowledge gained from his former employment in any future employment more so with a competitor.

8. PROTECTION OF DATABASES BY CONTRACT

A seller of the database can ask any purchaser to enter into a written contract as a condition of purchase of the database. Similarly, surveyor of the computer lawyer database could refuse to sell this information to anyone unless they first sign a written contract. That written agreement could expressly provide that the purchaser will not disclose the list of computer lawyers to anyone but authorised users, nor make any copies or unauthorised use of the information. Typically this takes the form of a License Agreement between the preparer/licensor of the database and the user/license of the database.

A License Agreement is unlike a typical purchase and sale agreement in that the ownership of the product involved, the program, remains in the licensor. The licensee merely purchases the right to use the program. The licensee's right to use the program can be limited in any number of ways. The most important limitations typically are that licensee can only use the program on one or a select number of computers, the licensee may not make any copies of the program, and the licensee has to keep confidential certain information about the program or the database. Many other types of limitations or rights and reservations can be contained within the license agreement between the parties.

9. PRACTICAL MEANS OF PROTECTION OF DATABASES

Since the law and courts in general are struggling to keep up with the rapid changes in technology, the author of a database is well advised to try and strengthen his legal hand as much as possible with certain practical protection measures. There are methods, which a programmer can employ to try and prevent someone from simply copying his work, or if they do, to make proof of this copying in court far easier. Without the conscious employment of these methods it may be difficult to know whether or not a competitor has "cheated," and simply copied your information, or has come up with the same information on his own.

The solution to this problem is the deliberate placement of errors or omissions in your database. If your competitor's database contains the same errors or omissions, then you have pretty good evidence that your database was copied. The odds are astronomical against a second database happening to come up with the same errors and omissions as the first.

Although a clever "pirate" might detect and eliminate or correct some seeds in a salted database, if the database is large enough and the original compiler/ salter author is clever enough, it is unlikely that a pirate will ever catch them all. These seeds will provide the best evidence of copying. They will bloom at the time the pirate is sued and this evidence is placed before the Judge deciding the case.

Even if the authors do not deliberately salt their database, errors will occur naturally anyway if the database is large enough. So in addition to deliberately adding some harmless errors, when and if accidental errors are discovered, they should also be carefully documented or recorded. When subsequent revised additions of the database are made, not all errors should be corrected. There should always be subtle and harmless errors that are well documented in order to have the seeds necessary to protect a database.

In computer databases, however, there is an additional element, "signature", which can be used to prove copying. Signature pertains to the computer code or programming itself used to record the information and the program which manipulates the information. The signatures can be identified by the author as they depict his style of programming. This can be comparable to the style of writing. A programmer has also the opportunity to deliberately implant hidden but recognisable signatures in his work. These deliberate idiosyncrasies can be documented and can again provide excellent proof that there has been a wholesale copying of the program data.

Some database products consist only of the database itself and the user displays this database on his program. For instance, the names and addresses of computer lawyers could be typed in a MSWord file. The purchasers of a database would thus have to use their own MSWord program in order to view the information. In other types of database programs, the information is sold along with a program, which allows you to view and manipulate the data. In this

case it is a "standalone" program which does not require another program to view it. Therefore, instead of having to load a lost of the lawyers' names and addresses into MSWord, under such a standalone program simply running the program would display the names and addresses by itself. When the database program is a standalone type with its own display and manipulation capabilities, then there are far more opportunities to place signatures in the programming itself. Further, the copy protection strategy that is applicable to all types of software can be applied.

Also, standard non-copying protection can be imposed upon the program itself. This makes it difficult for most users to ever make a copy of the program. Still, as every computer buff knows, for every good copy protection scheme there is another good "unprotection" scheme. In other words, a skilled programmer can find a way around such practical copy protection schemes. The ability of one programmer to rise to the technical competence of another, and frustrate such practical protection schemes, makes legal protection all the more important.

10. CONCLUSION

Although copyright protection is important and should almost always be pursued, in any license of a computer database of significant value, copyright protection alone should not be relied upon to prohibit unauthorised copying. Trade secrecy protection and an express written agreement between the vendor and consumer are necessary to try and protect the database. If, as expected, information continues to grow in value and importance as a commodity in our society, the proliferation of licence and secrecy agreements is likely. To make or buy technology, the country needs a strong system of IPR protection, be it copyrights, patents or trademarks. If we need to stand on par with the developed nations in the world market for knowledge, we need to protect ourselves and this is the only way of converting knowledge into wealth.

About the Author

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