PRACTICAL AND LEGAL PROTECTION OF COMPUTER DATABASES

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In this article I wish to discuss both the practical and legal methods of protecting computer database from unauthorised copying and use. Intellectual Property Rights (IPR); protection for software has traditionally been restricted to copy rights. Software can only be patented as a literary work. Copyright infringement is fairly easy to get away with since it can always be claimed that the source codes, algorithms *etc.*, could be used for different implementations. Hence 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: copyright, trade secrets and contract, can create a powerful defense against the "computer pirate." Indian Software Industry, being one of the top most foreign exchange earner for this country needs to take a closer look and safe guard 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 for only by doing so there is very good scope of original product development. But before going to the subject of this article there is need to understand where India stands in the new IPR regime more so after it ratified and signed the TRIPS Agreement (Trade-related Intellectual Property Rights) in 1996 which is part of the WTO agreements.

Where does India stand on the IPR's

The TRIPS Agreement, signed and ratified by India in 1996, prescribes minimum standards of protections for the following IPR's :

A. COPYRIGHTS : After its amendment in 1994, the current Copyrights Act provides for both economic and non-market rights Though the present legislation more than meets the WTO requirements it is felt that the enforcement is weak. The WTO requires that the Indian Act extend protection to literary, scientific and artistic works.

B. TRADE MARKS : The Bill for Trademarks registration for service marks and non registration of trademarks is yet to be tabled. The Indian Trade Mark and Merchandise Act, 1958 specifies the registration period of 7 years. However while accepting the Registration period of 7 years the WTO has recommended that service marks should be allowed.

C. INDUSTRIAL DESIGNS : The Indian Designs Act, 1911 though meets the WTO specifications it is recommended that Industrial designs that are new and original should be protected for 10 years.

D. TRADE SECRECTS : Presently no specific statutes exist except for the agreements entered into between the employer and the employee in the form of non-disclosure and secrecy agreements. The nearest available protection is under the

Indian Contracts Act and Indian Partnership Act, but both of them offer minimal protection.

E. PATENTS: The Indian Patents Act, 1970, presently allows patents only for food, medicines, drugs and chemicals. WTO agreement requires that both process and product patent must be available in all fields of technology. The present duration of process patent is 5 years from the date of sealing or 7 years from the date of filing. Product patent duration is for 14 years. WTO requires that the time period be made common and extended to 20 years. A tall order indeed!

As already stated that IPR protection for software has been traditionally by way of Copyrights. For the Indian Industry, low value-added body shopping and data processing constitute the bulk of the soft ware exports. Given the economic situation these products are unlikely to be patented or copyrighted.

Whate is a Computer Database ?

To start with "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 and the desired information retrieved using a computer. All computer databases are termed as "software". The 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*. As society moves further into the informational age 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 against its misuse, theft, unauthorised copying and use.

Databases have long existed in manual or book form. For example the Telephone book or directory and many reference books, our own 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, however, 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 Inter-Net.

An automated database 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 Copy rights a computer database can be defined also as a "compilation" which means data formed by the collection and assembling of preexisting materials or of data that are selected, co-ordinated 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, guide book, law reporter, catalog, chart, or racing guide.

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 co-ordination 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, understanbily 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 owns 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 data base own? How can he prevent another 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 and, hence this aspect of the database might not fall under the caption "copy right" and hence 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 computer Advocates or Solicitors would not be able to stop the competitor from coming out with compilation of 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 a database program. There are, of course, other legal theories propounded in the United States, 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.

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 co-ordination 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 many 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 our 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 you 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 "original" enough work to be afforded copyright protection. These Courts, found "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 of 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.

Apart from Indian Copy Right Law, though more than meets the WTO requirements still has weak enforcement, and with all of the other problems inherent in copyright protection of a database, contract and trade secret law become all the more important to try and prevent the unauthorised copying of factual data in a database.

Trade Secrecy Protection

Trade secrete had long been the favorite protection by the software industry. 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. Essentially a trade secret is 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, 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 has to receive 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.

Protection by contract

A seller of the database can require that any purchaser enter into a written contract as a condition of purchase of the database. Using our example, the 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/licensee of the database.

A License Agreement is unlike a typical purchase and sale agreement in that 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.

Practical means of Protection

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.

The placement of deliberate errors and omissions in a program is known as the placement of "seeds" into a database, or "salting" a database.

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 you do not deliberately salt your 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 which can be used to prove copying which I refer to as a computer "signature." This signature pertains to the computer code or programming itself used to record the information and the program which manipulates the information. These 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 idiosyncracies 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 own 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 "stand alone" program which does notrequire another program to view it. So, instead of having to load a list of the lawyers names and addresses into MSWord, under such a stand alone program you would simply run the program and it would display the names and addresses by itself.

When the database program is a stand alone 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 apply.

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.

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, then the proliferation of license 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.

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