A Comparative Study on Computer Program with Special Reference to Reverse Engineering

K.K. NAKSHATHRA REGISTRATION NO. PD19015
UNDER THE GUIDANCE AND SUPERVISION OF

Ms. J. STAR, M.L., ASSISTANT PROFESSOR IN LAW
CHENNAI DR. AMBEDKAR GOVERNMENT LAW COLLEGE, PATTARAIPERUMPUDUR
THIRUVALLUR -631 203.

I.   INTRODUCTION

This chapter deals about the Intellectual Property Rights that protects the intellectual creations of human beings. According to the Indian Constitution[1] gives every Indian citizen to exercise the freedom of expression. Based on the Indian Constitution has right to express his/ her intellectual creations of human being is protected by Intellectual Property Rights.

The Copyright law protects the originality of work. Copyright is protecting only the expression not the source of the ideology. The copyright protection commences as soon as the work is created and it does not require any registration. Traditionally the concern of the copyright law was limited to books, music, paintings and films, now it has extended to the computer program. The copyright law is not given exclusive right to the copyright owner as it has limitation for the intention of developing the computer program, if the exclusive right is given to the copyright owner it will narrow down to the monopoly business and there will not be an healthy competition and hence the scope of development is restricted. The copyright act is equally balancing the owner as well as theconsumer/public.

According to the copyright act, computer program is protected under the literary work. Indian copyright Act, 1957 defines the computer programme [2] means a set of instructions expressed in words, codes, schemes or in any other form, including a machine readable medium, capable of causing a computer to perform a particular task or achieve a particular result; And Indian copyright act Section 52 certain act not to be infringement of copyright which explains the fair dealing as the storing of any work in electronic medium for the purposes mentioned in the clause including the incidental storage of any computer program which is not itself a infringing

---

[1] Article 19 (1) (a)

[2] sec 2 (ffc)"computer programme The Indian copyright Act, 1957 ,the copyright (Amendment) Act 2012 .

copy for the said purposes, shall not constitute infringement of copyright. So the copyright allows the reverse engineering of computer program as a fair use.

Reverse engineering of computer program extents with the conditioning to certain limits it should be private or personal use, including research, criticism or review, reporting the current events and current affairs[3]. The main purpose of reverse engineering is to achieve the goal of interoperability or compatibility. Reverse engineering is the process of understanding the structure and functionality of software which is given in the form of object code. The software developers or competitors copying the original computer program to understand the functional element and to achieve the interoperability or compatibility are not an infringement of copyright Act otherwise itis intermediate copy.

Copyright owners taking more effort to protect their software from reverse engineering, by the way of software license agreement. Even though, the fair use permits the reverse engineering of software, the copyright owners restricting the reverse engineering by Shrink-Wrap or Click-Wrap licenses. In this research it is to be critically analyzing the legal validity of software license which prohibits the reverse engineering in European Union, United states and India.

1.1. DEFINITION OF SOFTWARE REVERSE ENGINEERING

Reverse engineering is to convert the object code to source code. It is to understand the structure and functionality of the computer program. Computer program consists of object code. Object code is the machine readable language, which contains number of once and zeros and thus this term is been coined as binary codes. Source code is the human readable language which contains of words and mathematical formulas. The computer program is been created in the source code and it is converted to object code as this done to understand the computer hardware so the output is been displayed accordingly.

---

[3] The Indian copyright Act, 1957, the copyright (Amendment) Act 2012 sec 52"certain act not to be infringement of copyright.

The theme of the reverse engineering is to create independent computer program for inoperability or compatibility. The software developers and the competitors have difficulty to understand the object code and cannot create new program without knowing the idea and functional elements. Through decompilation of computer program is the only way to understand the original programs idea and functional elements. Software developers and the users are copying the copyrighted computer programs for the purpose of decompilation. If the original computer program is copied for the purpose of reverse engineering then this is not to be considered as infringement.

1.2. SIGNIFICANCE OF REVERSE ENGINEERING

The modern society is day to day technically evaluating the IT industries. The software industry is in the leading position of the modern society. Outdated computer program should not help to develop the software industries. So, the innovation of computer program in existed is needed. In Copyright Act fair use of reverse engineering is permitted to create a new computer program by the developers. In the reverse engineering of computer program will not achieve the goal without decompilation. Result, permitting the reverse engineering is lead to healthy competition as well as available to the public with low cost. It prevents the monopoly and increasing the competition.

1.5. STATEMENT OF THE PROBLEM

Reverse engineering of computer program can constitute fair use if the result of the reverse engineering are used

to develop non-infringing commercial products. Reverse engineering of computer program permitted under the copyright act as a fair use. Whether the right can be prohibits under software license. The researcher is maintaining the legal validity of software license prohibiting the reverse engineering

1.6.   OBJECTIVES OF THE STUDY

1.   To study the scope of the copyright protection of computer program.

2.   To analyze the software reverse engineering under the fair use.

3.   To study the significance of interoperable and compatible of reverse engineering.

4.   To legally diagnose the decompilation of computer program.

5.   To analyze the software license agreement.

6.   To critically analyze the legal validity of software license which prohibit the reverse engineering in U.S,E.U, and India.

1.7.   HYPOTHESES
To testify the software license of copyrighted computer program prohibits reverse engineering and the prohibition of reverse engineering by software licensing of copyrighted computer program be a patent protection. It can be gained from a study on computer program by a comparative method among U.S, E.U, and India. Software licensing of copyrighted computer program can have a negative impact on patent protection.

1.8.   METHODOLOGY
The study is doctrinal base the researcher on primary and secondary source like books, journal, and web source. Analytical method used for critical analysis of copyright, anti-circumvention and competition law to reach them. Further, the researcher made an analysis the international instruments of U.S, E.U and India on computer program by employing comparative method.

1.9.   SCOPE AND LIMITATION OF THE STUDY
The research is contains the protection of computer program in copyright and the copyright act is equally balance the owners as well as the end users. For the purpose of balancing the law the fair use consists in copyright act. The reverse engineering is nothing but converting the object code into source code to understand the computer program. That reverse engineering should not be consists of similar functional elements from which it is reverse engineered. This promotes the independently computer program. The copying of copyrighted works is considered legal so long as the use does not deprive the copyright owner of appropriate rights and economic rewards[4]. Software developers seeking to protect their product from unlimited reverse engineering and to strengthen their legal position in a product infringement. Copyright owners preventing the reverse engineering by the way of creating technical tools such as a password or lock-and-key programs. Such situation gives rise to the most contentious legal question in recent decades. How the fair use doctrine resolves the underlying intermediate copying during the decompilation of a copyrighted program for the purpose of compatibility with the their own code to achieve the desire functionality based on only the necessary information of the original program functional equivalence.

1.10.   SCHEME OF THE STUDY
The research work has been divided into seven chapters.
1.   **CHAPTER I: 'Introduction'** articulates the problem for study pertaining to computer software licensing in connection with reverse engineering. It further reflects the need for study, review of the literature, objectives of the study, hypothesis, methodology adopted, scope and limitation of the study.
2.   **CHAPTER II: 'Copyright Protection Of Computer Program'** deals with the scope of copyright protection and the significance of interoperability and examines the relevance of reverse engineering in the software industry.
3.   **CHAPTER III: 'Fair Use Of Copyrighted Computer Program'** analyses the concept of fair use/ fair dealing.

---

[43]John T. soma, Sharon K. Black-Keefer, Alexander R. Smith united states and European union software

licenses

4. **CHAPTER IV: 'Software License agreement under copyright law'** discusses the types of software license agreement along with the legal validity of software license. It elaborates software licensing fee with help of a case law.

5. **CHAPTER V: 'Legal Aspects of Reverse Engineering'** explains about reverse engineering, its types, legitimacy of reverse engineering and its clause of prohibition.

6. **CHAPTER VI : 'Status Of Computer Software Around The Globe'** explains about the position inUS, position in European Union, Position in India.

7. **CHAPTER VII: 'Conclusion And Suggestions'** being the very last chapter of the present work addresses an in depth analysis of the concept of software licensing, the pros and cons and area of development. It also lists out some landmark case laws related to this research topic. It is earnestly believed that the conclusions drawn and suggestions presented on the basis of critical study in this discourse will be a real contribution to the field.

II. COPYRIGHT PROTECTION OF COMPUTER PROGRAM

2.1. A BRIEF ABOUT COMPUTER PROGRAM PROTECTION

This chapter deals with the copyright computer program protection which is a legal term that rights given to the creators of literary and artistic works. It contains bundle of rights. It is giving protection to published and unpublished works which is in tangible form under the authority of the author. Copyright provides exclusive rights to the creators to use or to authorize to use their works. Article 9.2 of TRIPs Agreement[1] says that copyright protection shall extent to expression and not to ideas, procedures, and method of operation or mathematical concepts as such.[2] Copyright not protecting idea which is explained in the Indian copyright act "no ownership in case of mere idea"

"A person may have a brilliant idea for a story , or for a picture, or for a play, and one which, so far as he is concerned, appears to be original, but if he communicates that idea to an author or a playwriter or an artist, the production which is the result of the communication of the idea to the author or the artist or the playwright is the copyright of the person who has clothed the in a form, whether by means of a picture, a play, or a book, and the owner of the idea has no rights in the product"[5] in the case of Donoghue v. Allied Newspaper Ltd.,[3] says that ' if

---

[1] TRIPs Agreement, Article 9, Relation to the Berne convention.

[2] Ibid.,

[3] Donoghue v. Allied newspaper Ltd., (1938) 3 ChD 503. This case concerned a series of articles published in the news of the world newspaper about the then-famous jockey Stephen donoghue and his experiences in the world of horse racing. Mr. Donoghue was interviewed about his adventures, which were subsequently used by a professional journalist S. T. Felstead. The series of articles published were called "Steve Donoghue's Racing Secrets, Enthralling Stories of the sport of Kings", and all articles were approved by Mr. Donoghue prior to publishing. Mr. Felstead wanted to further use the material which was published in these articles by writing a new piece titled "My Racing Secrets. By Steve Donoghue " to be published in the newspaper Guides and ideas, which used condensed

the idea, however original, is nothing more than an idea, and is not put into any form of words, or any form of expression such as a picture, then there is no such thing as Copyright at all. Copyright gives exclusive rights to author to reproduce the material, issue copies, perform, adapt and translate the work for a minimum period of the lifetime of the author plus sixty years.[4]

2.2 COMPUTER PROGRAM PROTECTION: DEBATE BETWEEN PATENT ANDCOPYRIGHT

Patent is granted to an "invention" which is defined under section 2(j) of Indian patent act[5] "invention" means a new product or process involving an inventive step and capable of industrial application i.e. any "new and useful" art or process or method or machines or appliances or other articles or substances produced by manufacture is eligible for patent. It grand's an absolute monopoly and section 48(a) of the Indian patent act[6] says that where the subject matter of the patent is a product, the exclusive rights to prevent third parties, who do not have his consent, from the act of making, using, offering for sale, selling or importing for those purpose that product in India which means it prevents others from making, using, offering for sale without the consent of the

patent holder for a period of 20 years.

In copyright, idea or the procedures, methods of operation or mathematical concepts cannot be protected. While coming to the computer program idea and source or object code cannot be protected. But in patent, level of protection is extends to idea and patenting on software extends to protect the source code, which is the essence of practical technical knowledge in software. If patent protection given to the computer program it leads to face

---

parts from the older articles, effectively creating a new work. Mr. Donoghue did not consent to the publication of new works, yet whenthe piece was published in the newspaper, Mr. Donoghue took action to prevent any further publications of such articles.

[4] Ibid.,
[5] The Patent Act, 1970, section 2(j) invention.
[6] The Patent Act, 1970 section 48. Rights of Patentee.

the problem arises in interoperability and compatibility, the low cost of massive reproduction of software, the difficulty of inspecting software distributed without the source code, and the rapid evolution of the market. Copyright supports these characteristics whereas patents are restrictive. So copyright gives protection to the owner as well as increasing the healthy competition.

2.3. A BRIEF HISTORY OF COPYRIGHT

The world's first copyright law was the Statute of Anne, enacted in England in 1710. This Act introduced for the first time the concept of the author of a work being the owner of its copyright, and laid out fixed terms of protection. Following this Act, copyrighted works were required to be deposited at specific copyright libraries, and registered at Stationers' Hall. There was no automatic copyright protection for unpublished works.

Legislation based on the Statute of Anne gradually appeared in other countries, such as the Copyright Act of 1790 in the United States, but copyright legislation remained uncoordinated at an international level until the 19th century. In 1886, however, the Berne Convention was introduced to provide mutual recognition of copyright between nation states, and to promote the development of international standards for copyright protection. The Berne Convention does away with the need to register works separately in each individual country, and has been adopted by almost all the nations of the world (over 140 of the approximately 190 nation states of the world). Following the United States' adoption of the treaty in 1988 the Convention now covers almost all major countries. The Berne Convention remains in force to this day, and continues to provide the basis for international copyrightlaw.

One of the biggest changes implemented by the adoption of the Berne Convention was to extend copyright protection to unpublished works, and remove the requirement for registration. In countries of the Berne Convention this means that an individual (or the organization they are working for) owns the copyright of anywork they produce as soon as it is recorded in some way, be it by writing it down, drawing, filming, etc.

While the adoption of the Berne Convention has had many benefits for the creators of original works, the systems for protecting unpublished works remain fragmented internationally, with some states offering optional registration services within their own jurisdiction, while others offer no kind of registration at all. Without registration, it can be difficult to judge who the rightful owner of a copyrighted work is. The national registration systems may not be willing to offer support in a dispute in another country. The Intellectual Property Rights Office (also known as the IP Rights Office and the IPRO) was created in an effort to create a central international point of deposit for unpublished works from around the world, via its Copyright Registration Service. The hope is thatthis can provide a standard point of registration for all citizens of Berne Convention nations.

2.3.1 Originality Of Copyright

Copyright law gives protection to the original work of authorship such as Literary, dramatic musical, and artistic works, cinematographic films and sound recordings[7]."Literary work" explains in the Copyright Act, 1957 the word 'literary work' cover work which is expressed in print or writing, irrespective of the question whether the quality or style is high. The word 'literary' seems to be used in a sense somewhat similar to the use of the word 'literature' in political or electioneering literature and refers to written or printed matter; Judicial interpretation was given in the case University of London press ltd. v. University tutorial press ltd.,[8] In this case the word

'Original' does not in this connection mean that the work must be the expression of original or inventive

---

7 Copyright Act,, 1957, section 13(a),(b),(c)

8 University of London press lt. v. University Tutorial press ltd., (1916) 2 ch 601. Examiner were appointed for a matriculation examination of the university of London, a condition of appointment being that any copyright in the examination papers should belong to the university. The university agreed with the plaintiff company to assign the copyright, and by deed purported to assign it, to the plaintiff company. After the examination the defendant company issued a publication containing number of the examination papers with criticisms on the papers and answers to questions. In an action for infringement of copyright.

thought.[9] Copyright act are not concerned with the originality of ideas, but with the expression of thought, and in the case of 'literary work' with the expression of thought in print or writing.[10] Dissertation is therefore, prima facie a literary work.[11] It is judicially interpreted in Fateh Singh Metha v. O.P. Singhal[12] case it was held that even a student can sue for infringement of copyright relating to his thesis.[13] In U.S Title 17 U.S.C section 101 defines "literary work" are works other than audiovisual works, expressed in words , numbers, or other verbal or numerical symbols or indicia, regardless of the nature of the material objects, such as books, periodicals, manuscripts, phonorecords, film tapes, disks, or cards, in which they are embodied[14].

Originality is a precondition to copyright protection. The originality which is required relates to the expression of the thought, that the work must not be copied from another work. It should be originate from the author. In the Feist Publication Inc., v. Rural Telephone Service Co. Inc.,[15] The court ruled that Originality, as the term used in copyright means only that the work was independently created by the authors and that it possess at least some minimal degree of creativity.[16] The constitutional requirement necessitates independent creation plus

---

9   Ibid.,

10   ibid.,

11   The Copyright Act, 1957, Literary work: scope

12   Fateh Singh Metha v. O.P. Singhal, AIR 1990. O.P.Singhal –ME(Mech.) Jodhpur University. Dissertation "An Experimental Investigation of Swirling Flow in Cylindrical Chambers". Fateh Singh Metha- Supervisor- copied It in his PhD- 'An Aerodynamic Study of Swirling Jets"- a report by panel confirmed copying. Mr. Metha claimed that dissertation is of his own.

13   Ibid. 11 1990

14 United States of America; U.S. Copyright Act, 17 U.S.C. $$ 101 et seq.

15 Feist Publications Inc. v. Rural Telephone Service Co., U.S Supreme Court, 499 U.S. 340 (1991). Rural Telephone Service Company, inc. (plaintiff) provides telephone service to several communities. Due to a state regulation, it must issue an annual telephone directory, so it published a directory consisting of white and yellow pages. The yellow pages have advertisement that generates revenue. Feist publications, inc. (defendant) are a publishing company whose directory covers a large range than a typical directory. Defendant distributes their telephone books free of charge, and they also generate revenue through the advertising in the yellow pages. Plaintiff refused to give a license to defendant for the phone numbers in the area, so defendant used them without plaintiff's consent. Rural sued for copyright infringement.

16   Ibid.,

a modicum of creativity.[17] The statute envisions that some ways of selecting, coordinating, and arranging data are not sufficiently original to trigger copyright protection. Some original effort must be there to get copyright protection.[18]

2.5.2 Fixation Of Copyright

All Literal work should be in fixed in tangible medium. In U.S. Title 17 U.S.C sec 101[19] defines fixation a work is "Fixed" in a tangible medium of expression when its embodiment in a copy or phonorecord, by or under the authority of author, is sufficiently permanent or stable to permit to be perceived, reproduced, or otherwise communicated for a period of more than transitory duration. A work consisting of sounds, images, or both, that are being transmitted, is "fixed" for purposes of this title if a fixation of the work is being made simultaneously with its transmission.[20]

2.6.   IDEA-EXPRESSION DICHOTOMY

In Copyright Act gives protection only to an Expression not an Idea. In U.S. Title 17 U.S.C section 102

(b) of the Copyright Act of 1976, says that in no case does copyright protection for an Original work of authorship extend to any idea, procedure, process, system, method of operation, concept, principle, or discovery, regardless of the form in which it is described, explained, illustrated, or embodied in such work[21]. Owner of copyrighted work cannot get protection for his idea. So, everyone has right to use the idea from a copyrighted work.

---

[17] Ibid.,

[18] Ibid.,

[19]United States of America; U.S. Copyright Act, 17 U.S.C. $$101 et seq; fixed.

[20] Ibid.,

[21] United states of America; U.S copyright Act , 17 U.S.C $$ 101 et seq. Title 17 U.S.C section 102(b) under subject matter of copyright:In general.

2.7.   DOCTRINE OF MERGE

Doctrine of merger is a principle holds that, if an idea can only be expressed in one or a few number of ways, copyright law does not protect the expression because it has merged with an idea. That idea and expression are very difficult to separate, they are said to merge. In the case of Baker v. Selden[22] the use of the art is a totally different thing from a publication of the book explaining it. In using the art, the ruled lines and headings of accounts must necessary be used as incident to it.[23]

Whether the art might or might not have been patented is a question which is not before us. It was not patented, and is open and free to the use of the public.[24] And of course, in using the art, the ruled lines and headings of accounts must necessary be used as incident to it.[25] The very object of publishing a book on science or the useful arts is to communicate to the world the useful knowledge which it contains. But this object would be frustrated if the knowledge could not be used without incurring the guilt of piracy of the book.[26] And where the art it teaches cannot be used without employing the methods and diagrams used to illustrate the book, or such as are similar to them, such methods and diagrams are to be considered as necessary incidents to the art, and given

---

[22]Baker v. Selden 99, 105 (1880) Selden (plaintiff) copyrighted a book in which he used in introductory essay explaining his system of book keeping followed by forms to put the system to use. He had arranged the columns and headings so that the entire operation of a day, week, or month was on a single page or ob two pages facing each other. Baker (defendant) then began selling forms with columns and headings arranged differently to achieve the same result. When plaintiff successfully sued for copyright infringement, defendant appealed. He argued that the forms were non-copyrightable.

[23]Ibid..,[24]Ibid., [25]Ibid., [26]Ibid.,

therewith to the public; not given for the purpose of publication in other works explanatory of the art, but for the purpose of practical application.

While coming to the literal elements In Nichols v. Universal Picture corporation[27] case the court developed the Abstraction test that; idea/expression dichotomy holds that ideas are never copyrightable, though the expression of those ideas may be subject matter of copyright protection. While a plot is more of an idea, recognizes that in some cases the play may nonetheless be copyrightable, though not in this case.[28]

In the Non-literal elements, Bikram's Yoga College v. Evolution Yoga[29] Mark Drost and Zefea Samson, husband and wife, are the owners of Evolation Yoga and defendants in the case. They are former trainees of Choudhury who completed his teacher training program and became certified Bikram instructors in 2002 and 2005, respectively. In 2009, after Choudhury banned Drost from "any and all involvement in Bikram Yoga," they opened Evolation Yoga studios in Buffalo, New York and Tampa, Fla. Evolation offers several different types and styles of yoga, including hot yoga classes that include 26 yoga poses and two breathing exercises that are similar to Choudhury's. On July 1, 2011, Choudhury filed a complaint in the U.S. District Court for the Central District of California alleging several claims against Evolation, including copyright infringement. Evolation denied the claims.

A year later, the U.S. Copyright Office issued an advisory opinion stating that "a claim in a compilation of

exercises or the selection and arrangement of yoga poses will be refused registration." In this case U.S. court held that; sequence of yoga poses and breathing exercises was not entitled to copyright protection. Because it was

[27]Nichols v. Universal Picture Corporation. Plaintiff is the author of a play, Abie's Irish Rose" Defendant produced a motion picture, "The Cohens and The Kells", which the plaintiff claims was taken from it. Both plays portray stories of a Jewish and an Irish-Catholic family in which the children fall in love and are married, their parents are outraged, a grandchild is born, and there is a reconciliation that follows.
[28] Ibid.,
[29]Bikram's Yoga College v. Evolution Yoga, No. 13-55763 (9th cir.2015)

an idea, process, or system designed to improve health, rather than an expression of an idea. Sequence was a notprotectable idea; it was also ineligible for copyright protection as a compilation or choreographic work[30].

2.8. COPYRIGHT PROTECTION OF COMPUTER PROGRAM UNDER LITERARYWORK
In the new technology gives more importance to software industry. Programs are commonly referred to as software. Software is essential to a computer because it controls everything the computer does. All of the software that we use to make our computer useful is created by software programmers. Computer program defined in the Copyright Act under section 2(ffc) "Computer Programme" means a set of instructions expressed in words, codes, schemes or in any other form, including a machine readable medium, capable of causing a computer to perform a particular task or achieve a particular result. In U.S. the computer program defined under Title 17 U.S.C. section 101 A "computer program" is a set of statement or instruction to be used directly or indirectly in a computer in order to bring about a certain results. Computer program has literal elements (object code and source code) and Non-literal elements (functional part). Copyright protection extends to non-literal elements in a computerprogram. However, not all non-literal elements are protected expression.
The U.S. Copyright Act section 102(a) states "copyright protection subsists includes original works of authorship fixed in any tangible medium of expression,[31] In computer program includes program manuals and papers, punched cards and magnetic tape or discs required to understand or operation of computers. These all are fall under the copyright protection in "literary work". Both object code and source code which is used in computer program are entitled to copyright protection. The copyright act is equally balancing the owners of copyrighted work and the consumers. Copyright protection requires the work should be an Original, it should be fixed in tangible medium and idea and expression can be separate. Now-a-days Computer has touched every part of our

[30] Ibid.,
[31]United States of America, Copyright Act. Section 102 subject matter of copyright: in general.

lives. It is almost impossible to go through a single day without a computer. In India computer defined in the copyright act under section 2(ffb) "computer" includes any electronic or similar device having information processing capabilities.[32]
TRIPs Agreement Article 10.1[33] under the computer programs and compilation of data says that Computer program, whether in source code or object code, shall be protected as literary works under the Berne convention (1971)[34]. is not directly protects the computer code as original expression.
According to the copyright act section 2(o)[35]computer program is protected under the literary work. In

E.U Directive Article 1 "Object of Protection" states that member states shall protects computer programs, by copyright, as "Literary works" within the meaning of the Berne Convention for the protection of literary and artistic works. For the purposes of this Directive, the term "computer programs" shall include their preparatory design material[36].

2.9. IDEA-EXPRESSION DICHOTOMY IN COMPUTER PROGRAM
Under European Copyright law[37], provides similarity that "Ideas and principles which underlie any elements of a computer Program, including those which underlie its interfaces, are not protected by copyright under this Directive[38]. While coming to the literal element of computer program in Apple computer Inc. v.

[32]The Copyright Act, 1957 sec2(ffb) "computer" includes any electronic or similar device having information processing capabilities;

[33]TRIPs Agreement, article 10 computer programs and compilation of data.
[34]Ibid.,
[35]The Copyright Act,1957 sec 2(o) "literary work" includes computer programmes, tables, and compilations including computer[databases]
[36] The European Parliament and The Council of The European Union, Directive 2009/24//EC; Article 1 object of protection, 1;
[37] Article 1 (2) of the E.U Software Directives
[38]EU software Directive, Article 1 (2)

Franklin Computer Corp.[39] whether copyright can exist in a computer program expressed in object code.[40] Whether copyright can exist in an computer program embedded on ROM.[41] Whether copyright can exist in an operating system.[42] Here the Ratio was the copyright law protects the means of expressing an ideas and it is as near the whole truth as generalization can usually reach that if the same idea can be expressed in a plurality of totally different manners, a plurality of copyright may result.[43]

The doctrine of merger concept was interpreted in completely different manner in the case of Whelan Associates v. Jaslow Dental Laboratory, Inc.,[44] in which the court of Appeal for the third circuit held that: "The line between idea and expression may be drawn with reference to the end sought to be achieved by the work in question in other words, the purpose or function of a utilitarian work would be the work's idea, and everything

---

[39]Apple Computer Inc. v. Franklin Computer Corp. (1983) Franklin Computer Corporation (Franklin) (defendant) sold a personal computer, the ACE 100, that was intended to be compatible with all software and equipment designed for use with the Apple II computer. To ensure functionality for all products, Franklin purposely copied Apple Computer, Incorporated's (Apple) (plaintiff) operating system programs. Apple sued Franklin for copyright infringement and filed a motion for a preliminary injunction. The district court denied Apple's motion, and Apple appealed.
[40]Ibid.,[41]Ibid.,[42]Ibid.,[43]Ibid.,
[44]Whelan Associates v. Jaslow Dental Laboratory, Inc., US court of Appeals for 3rd circuit, 797 F.2d 1222. in 1978 Rand Jaslow tried to build a computer program to handle customer management, billing, accounting, inventory management and other functions for Jaslow Dental Laboratories. He gave up after a few months and hired Strohl Systems to do the job. The software was built by the half-owner of Strohl, Elaine Whelan, and delivered in March 1979. It was written in the EDL language and ran on an IBM Series/1 minicomputer. Strohl kept ownership of the software, which was branded Dentalab, and could license it to other companies in exchange for a 10% commission to Jaslow. In November 1979 Whelan left Strohl and set up her own business, acquiring the right to the software. Later, Jaslow became engaged in selling the Dentalab software in exchange for a percentage of the gross sales. He formed a company named Dentcom which in late 1982 began to develop a program in a different computer language (BASIC) but with very similar functionality called Dentlab, marketed as a Dentalab successor. The new software could run on IBM Personal Computers giving access to a broader market. On 30 June 1983 Jaslow's company filed a suit in Pennsylvania state court alleging that Whelan had misappropriated its trade secrets. Whelan filed a countersuit in federal court in Pennsylvania alleging that the Dentlab software violated Whelan's copyrights in the Dentalab software. The district court ruled that Dentlab was substantially similar to Dentalab because its structure and overall organization were substantially similar. Jaslow appealed the decision to the U.S. Third Circuit Court of Appeals.

---

that is not necessary to that purpose or function would be part of the expression of the idea".[45] This definition of idea and expression completely changed the scope of software protection, extending protection 'beyond the programs' literal code to their "structure, sequence, and organization" A program may therefore infringe a prior work even its object and source code are completely different from the prior work.[46] In another case of Lotus Development Corp. v. Paperback Software International[47] determining the copyrightability test laid down are;

When the idea-expression distinction applies is to conceive and define the idea in a way that places it somewhere along the scale of abstraction.[48] Whether an alleged expression of the idea is limited to elements essential to expression of that idea (or is one of only a few ways of expressing the idea) or instead includes identifiable elements of expression not essential to every expression of that idea.[49] Having identified elements of expression not essential to every expression of the idea, the decision maker must focus on whether those elementsare a substantial part of the allegedly copyrightable work[50].

Computer Associates International Inc., v. Altai Inc.,[51] in this case analysis to help distinguish the non protected ideas in a computer program from the program's protected expression in cases involving copyright

---

[45]Ibid.,[46]Ibid.,

[47]Lotus Development Corp. v. Software International (1999) released a spreadsheet product, Quattro Pro, that had a compatibility mode in which its menu imitated that of Lotus 1-2-3, a competing product. None of the source code or machine code that generated the menus was copied, but the names of the commands and the organization of those commands into a hierarchy were virtually identical. Quattro Pro also contained a feature called "Key Reader", which allowed it to execute Lotus 1-2-3 keyboard macros. In order to support this feature, Quattro Pro's code contained a copy of Lotus's menu hierarchy in which each command was represented by its first letter instead of its entire name. Borland CEO Philippe Kahn took the case to the software development community arguing that Lotus's position would stifle innovation and damage the future of software development. The vast majority of the software development community supported Borland's position.

[48]Ibid.,[49]Ibid.,[50]Ibid.,

[51]Computer Associates International, Inc. v. Altai, Inc., U.S court of Appeals for 2nd circuit, 982 F.2d 693, 23 USPQ2d 1241. Computer Associates International (CA) (Plaintiff) designed, developed, and marketed numerous types of computer programs, including "CA- infringement." To separate the protected expression from non protected ideas they applied three stage test known as 'Abstraction, Filtration, Comparison' (AFC) test.[52]

The Abstraction test, for detecting non-literal infringement of literary work was applied to computer programs to separate the various elements in an order of increasing generality, moving from object code to source code to more abstract elements to the general outline of the program, in a manner resembling reverse engineering.[53]

Secondly the court purposed a Filtration stage, once the program's abstraction levels have been discovered. The substantial similarity inquiry moves from the conceptual to the concrete. Separating protectable expression from non-protectable idea.[54] This process entails examining the structural components at each level of abstraction to determine whether their particular inclusion at that level was "idea" or was dictated by considerations of efficiency, so as to be necessarily incidental to that idea; required by factors external to the program itself ; or taken from the public domain and hence is non-protectable expression. The structure of any given program may

---

Scheduler," a job-scheduling program containing a subprogram named "Adapter." Adapter was a wholly integrated component of CA- Scheduler with no capacity for independent use. In 1982, Altai, Inc. (Defendant) started to market its own job-scheduling program named "Zeke." Then, Defendant decided to rewrite Zeke to run in conjunction with a different operating system, and Altai's (Defendant) president, Williams, approached Arney, a computer programmer who work for Plaintiff, about working for Defendant. When Arney left Plaintiff to work for Defendant, he took copies with him of the source code for two versions of Adapter and used them to design Altai's (Defendant) new component-program, "Oscar" (Version 3.4). Arney copied approximately 30% of Oscar's code from Plaintiff's Adapter program. When Plaintiff discovered that Defendant may have appropriated parts of Adapter, it brought this copyright and trade secret misappropriation action against Altai (Defendant). A rewrite of Oscar began, named Oscar 3.5. The district court awarded Plaintiff $364,444 in actual damages and apportioned profits for copyright infringement regarding Oscar 3.4. However, the court denied relief on Plaintiff's second claim, finding that Oscar 3.5 was not substantially similar to Adapter. In addition, the court concluded that Plain tiff's state law trade secret misappropriation claim against Defendant was preempted by the federal copyright act. On appeal, Altai (Defendant) conceded liability for the copying of Adapter into Oscar 3.4 and raised no challenge to the award of damages. Therefore, only CA's (Plaintiff) second and third claims were addressed on appeal.

[52]Ibid.,[53]Ibid.,[54]Ibid.,

---

reflect some, all, or none of these considerations. Each case requires its own fact specific investigation. Here the merger doctrine is applied because protection of expression cannot be granted without monopolizing the idea.[55]

The final step, that involved the substantial similar test. We believe appropriate for non-literal program components entails a comparison. Once a court has sifted out all elements of the allegedly infringed program which are ideas or are dictated by efficiency or external factors, or taken from the public domain, there may remain a core of protectable expression. In terms of a work's copyright value, this is the "Golden Nugget". At this point the court's substantial similarity inquiry focuses on whether the defendant copied any aspect of this protected expression, as well as an assessment of the copied portion's relative importance with respect to the plaintiffs overall program[56].

Lotus Development Corp. v. Borland International[57] in this case question arises that whether a computer menu command hierarchy is copyrightable subject matter.[58] Answer is computer menu command hierarchy is not copyrightable it is a system, method of operation, process or procedure foreclosed from protection by 17 USC sec 102(b).[59] in this section no case does copyright protection for an original work of authorship extend to any

idea,

---

[55]Ibid., [56] Ibid.,

[57]Lotus Development Corp. v. Borland International (1995). Lotus Development Corp. (Lotus) (Plaintiff) marketed a computer spreadsheet program, Lotus 1-2-3. The program incorporated 469 menu commands, such as "Copy," "Print," etc. The program also enabled the user to write macros that would designate a series of commands with a single macro keystroke. Borland International (Borland) (Defendant) then released two versions of its own spreadsheet programs, called Quattro and Quattro Pro. Borland (Defendant) included a virtually identical copy of the whole 1-2-3 menu tree in its Quattro programs. It did not copy any of the Plaintiff's underlying computer code, but it did copy the words and structures of Lotus's (Plaintiff) menu command hierarchy so that consumers who used Borland's (Defendant) programs would not have to relearn any commands or rewrite their Lotus (Plaintiff) macros. Plaintiff sued for copyright infringement and received a judgment in its favor. Defendant appealed, arguing that the Lotus (Plaintiff) menu command hierarchy was not copyrightable because it was a system, method of operation, process, or procedure excluded from protection by the Copyright Act.

[58]Ibid.,[59]Ibid.,

procedure, process, system, regardless of the form in which it is described, explained, illustrated or embodied in such work.[60]

The term method of operation refers to the means by which a person operates something, whether it is a car, a food processor or a computer.[61] Thus text describing how to operate something would not extend to copyright protection to the method of operation itself. Other people would be free similarly, if new method of operation is used rather than described, other people would still be free to employ or describe that method.[62]

2.10.　ECONOMIC RIGHTS

Copyright Act gives exclusive rights to the owner to do or otherwise to doing his work to reproduce, issue copies, perform the work in public, translate, and adaption. In case of computer program including the above mentioned work and to sell or give on commercial rental or offer for sale or for commercial rental any copy of the computer programme.[63] In computer program, whether the copying of a program from a disk drive into RAM for its execution is the making of a reproduction of that work, the first of the exclusive rights in copyright. Although the answer seems obvious, it is complicated by the fact that the exclusive right is to "reproduce the copyrighted work in copies" and copies require that the work be fixed. In the MAI system corp. v. Peak computer Inc.,[64] case the loading of copyrighted computer software from a storage medium (hard disk, floppy disk or read only memory) into the memory of a central processing unit (CPU) causes a copy to be made. The absence of

---

[60]Ibid.,[61]Ibid.,[62]Ibid.,

[63] Copyright Act ,1957, section 14 (a),(i),(ii),(iii),(iv),(v),(vi),(vii) and 14 (b)(i),(ii).

[64] MAI System Corp. v. Peak Computer Inc.(1993). 991 F. 2d 511, 26 USPQ2d 1458 (9th cir. 1993). Peak Computer, Inc. is a computer maintenance company that organized in 1990. Peak maintained computer systems for its clients by performing routine maintenance and emergency repairs. When providing maintenance or making emergency repairs, Peak booted the MAI Systems computer, causing the MAI operating system to be loaded from the hard disk into RAM. MAI also alleged that Peak ran MAI's diagnostic software during Peak's service calls. This case involved the two parties MAI Systems and Peak Computer, as well as defendant Eric Francis, a former MAI Systems Corporation employee who joined Peak Computer, Inc.

ownership of the copyright or express permission by license, such acts constitute copyright infringement.[65] Copy created in the RAM can be "perceived, reproduced or otherwise communicated".[66] The court held that the loadingof software into the RAM creates a copy under the Copyright Act.[67]

Copyright Act gives bundle of exclusive rights to the Copyrighted owner but, still there are some exceptions andlimitation given in the Copyright Act. That limitations and exceptions are given to protect the public interest andto promote the competition. That limitations and exceptions comes under the fair use. In India, fair dealing/ fair use mentioned in the section 52 (1) under Copyright Act as a Certain Acts not to be infringement of copyright.[68] In U.S. fair use mentioned in the section 107 of U.S. Copyright Act as Limitations on exclusive rights: Fair use and in E.U. exceptions are given in Article 5 of E.U. software directive as Exceptions to the restricted acts. While coming to the computer program the Reverse Engineering comes under Fair use. The Fair use/fair dealing is clearly discussed in chapter III.

2.11.   R.G.ANAND V. DELUXE FILMS:

In the case of R.G.Anand v. Deluxe films,[69] The Appellant, R. G. Anand, was an architect by profession and a

playwright, dramatist and producer as well. He had wrote and produced a play called 'Hum Hindustani' in 1953 which received huge success and was re-staged numerous times. With the increasing popularity of the play, the second Respondent, Mr. Mohan Sehgal, got in touch with the Appellant. During the Appellant's meeting with the second and third Respondents, the Appellant narrated the entire play 'Hum Hindustani' to the second and third

[65]Ibid.,[66]Ibid.,[67]Ibid.,
[68] Copyright Act, 1957, section 52
[69] R.G.Anand v. Deluxe films; 1978, volume 4 SCC page 118:

Respondents. Appellant had elaborate discussions regarding filming the play in January, 1955. However, no further communication was made to the Appellant post the discussion.

Respondents in the month of May 1955 commenced the making of the film 'New Delhi', which the Appellant believed to be based on his play. Nevertheless, the Respondents guaranteed him that the movie had no resemblance and was not remotely related to his play. But after watching the movie in September, 1956 the Appellant came to the conclusion that the movie was indeed a copy of his play and consequently filed a suit for permanent injunction seeking a restraint against the Respondents from infringement his Copyright in the play 'Hum Hindustani'. The Trial Court along with the High Court decided in favor of the Respondents asserting that the act of the Respondents (of producing/exhibiting the film 'New Delhi') is not a copyright infringement. The Appellant preferred an appeal before the Supreme Court under Article 136 of the Constitution.

2.11.1   ARGUMENTS ON BEHALF OF THE APPELLANT

The principles lay down and the legal conjectures draw by the trial and High Court are in contrast to the settled principles established by Indian, American and English Courts towards infringement of Copyright.

The similarities between the play and the movie are so close that an inference can be easily drawn that the movie is indeed an imitation of the play.

The second and third Defendant were already familiar with the play before directing the movie and it was on the basis of the play they decided to make the movie.

2.11.2.   ARGUMENTS ON BEHALF OF THE RESPONDENTS

• The Trial Court as well as High Court applied the law correctly and it is futile to go into the merits of the concurrent findings of the facts established by the two courts.

• There exist a number of dissimilarities between the play and the movie in relation to the spirit and the content and hence there is no infringement of copyright.

• The respondent was undeniably in search of a story based upon the theme of 'provincialism' and the play did bestow him with a chance to produce a movie but with different climax, story, theme and characterization.

Court held that there can be no copyright protection in an idea, subject matter of them, plot, or historical or legendary facts and violation of the copyright in such cases is confined to the form, manner and arrangements and expression of the idea by the author of the copyrighted work.[70]

Where the same idea has been developed in a different manner it is manifest that the source been common similarities or bound to acquire in such a case the court should determined whether or not the similarities around fundamental or substantial aspects of the mode of expression adopted in the copyrighted work.[71] If the defendant work is nothing but the literal limitation of the copyrighted which if some variations here and there it will amount to violation of copyright act (in other words) the copy must be substantial and material one which once leads to the conclusion that the defendant is guilty of an act of piracy.[72]

One of the surest and safest test to determine whether or not these has been a violation of copyright is to see if the reader spectator or the viewer after have been read or seen both the works is clearly of the opinion and get

some unmistakable impression that the subsequent work appears to be the copy of the original (lay observant test).[73]

---

[70]Ibid., [71] Ibid.,[72]Ibid., [73] Ibid.,

Where the theme is the same but it presented and related differently so that subsequent work becomes a complete work. No question of copyright violation is arising.[74]

Where however, apart from the similarities appearing in the two works there are also material and brought dissimilarities which have the intention to copy the original and co-incidents appearing in the two works are clearly incidental no infringement of the copyright comes into existence.[75]

Violation of the copyrighted work amounts to act of piracy. It must be provided by clear and cogent evidence after applying by various tests lay down by the case.[76]

Where however the question is violation of the copyright of the stage play by the film producer or a director the task of the plaintiffs become more difficult to prove piracy it is manifest that unlike the stage play a film as a much broader prospective, wider field and bigger background defendant can introduced verity of gave a color and complexion different from the manner in which the copyrighted work as expresses the idea even so it the viewer after seeing the film gets a totally of impression that the film is by large a copy of the original play violation of the copyright may be set to be prove[77]. In another case was Anil Gupta v. Kunal Das Gupta[78] it is the case of the Plaintiff that he conceived the idea of producing a reality television program containing the process of matchmaking to the point of actual spouse selection in which real everyday ordinary people would participate before a Television audience. The Plaintiff had devised a novel concept for a TV show in which it would be the

---

[74] Ibid.,

[75] Ibid.,[76]Ibid., [77] Ibid.,

[78]Anil Gupta v. Kunal Das Gupta and Ors., (2000)25 PTC 1 (DEL). The court granted an injunction and held that the concept developed and evolved by the plaintiff was the result of the work done by the plaintiff upon the material which may be available in the public domain. However, what made the concept confidential was the fact that the plaintiff had used his brain and thus produced a unique result applying the concept. The plaintiff conceived the idea of swayamvar, a reality television show concerning match making. The plaintiff shared a concept note on this with the defendants. Later on the plaintiff came across a newspaper report informing that the defendants were planning to come out with a bog budget reality matchmaking show using the plaintiff's concept. The plaintiff sought injunction.

prerogative of a woman to select a groom from a variety of suitors. They had even decided to name the concept 'Swayamvar', knowing well that a large number of people would associate the name with the idea of a woman selecting a groom in a public forum and that it would create the necessary instantaneous recall and recognition of the mythological Swayamvar, giving the program a head-start. The aforesaid concept titled 'Swayamvar' was disclosed in early 1997 by the Plaintiff to his wife and one Mr. K Chandrasehkar. The Plaintiff then applied for registration after developing the concept as a piece of literary work under the Copyright Act. The work was registered and a certificate was duly issued in favor of the Plaintiff.

The Plaintiff put forth that in May/June of 1998, they spoke to Defendant No. 1 and gave a 1-page concept note of 'Swayamvar' to the Defendant, who gave an enthusiastic response to the idea. Defendant No. 1 further asked the Plaintiff to give a detailed presentation. Further, the Plaintiff contended that the concept note given by the Plaintiff to the Defendant at said meeting was a disclosure in utmost confidence which is the usual practice in the industry.

The second meeting took place in Defendant No. 1's office with the Plaintiff. The Plaintiff then described the concept of Swayamvar. It has been averred in the Plaint that the Plaintiff informed the Defendant that he had registered his concept and the same was copyrighted. On the same day, the Plaintiff further elaborated the program structure and format, divided into segments for easy implementation.

It is further the case of the Plaintiff that another meeting was fixed at the Defendants' office. In said meeting, the Plaintiff handed over to the Defendant, a letter which contained a proposal for five programs including 'Swayamvar'. This letter also accompanied a brief concept note containing the essential details and proposed

format of 'Swayamvar'. After said meeting, the Defendants asked the Plaintiff to give a detailed presentation at the earliest.

Another meeting was held between the Defendants and the wife and son of the Plaintiff, where a PowerPoint Presentation was given to the large team of executive of the Defendants. The printed version of the presentation and an internal discussion document which had been prepared by the Plaintiff's said representatives was also handed to the Defendants after the presentation.

Subsequently, the Plaintiff saw an article titled 'Camera, Lights, Shehnai! SONY TV to play Matchmaker'. Said article informed that Defendant No. 2 was due to launch a big budget reality TV show which would provide a platform for matchmaking. The report indicated that it would be like a Swayamvar or a marriage bureau on television. The Plaintiff presented that this article and others appearing subsequently in newspapers as well as the internet, uncannily replicated the information confidentially disclosed by him to the Defendants during their meetings and presentations. When he learned that Defendant No. 2 was going to launch a reality TV show 'Shubh Vivah', he wrote a letter to the Defendant to clarify any misconception of the source of the idea and then a legal notice was sent. The Defendant replied to said legal notice stating that what they were making was not a copy of Swayamvar and also took the stand that they had made the Plaintiff aware in their meetings that the Defendants were in the process of producing a programme based on the same theme.

Now clearly miffed, the Plaintiff contended that a copyright was held by him for a creative, unique and novel reality TV program that conducts real life matchmaking by giving certain women the opportunity, with mediation by an anchor person, to choose a husband of their choice from a chosen few suitors, in the presence of parents, in the studio. The Plaintiff sought copyright protection in the developed production of his concept and the format of his unique matchmaking show, which was then brought to the attention of the Defendants through various meetings held between them.

The Plaintiff contended that Copyright Infringement was afoot, in the guise of the Defendants taking a concept developed by the Plaintiffs and subsequently reproducing the same in the format of a TV show proposed by the Plaintiff, only titled differently as Shubh Vivah. Further, when the Plaintiff had submitted its program proposal for consideration, the same was done on the understanding that the broadcaster will either accept it or reject it. Therefore, the Defendants, by using said information imparted to it in strict confidence by the Plaintiff, breached the confidence reposed in them by the Plaintiff. Plaintiff claimed interim relief on two grounds:

∉   Breach of Confidence

∉   Permissibility of registration of idea developed in a concept

2.11.3.   ANALYSIS

After considering the contentions of both parties, the Court held that when a concept note as well as presentations was admitted to have been received by the Defendants, it cannot be said that they were under no obligation to maintain confidence. The argument of the Defendants that once the concept was registered under the Copyright Act the same came under public domain cannot be sustained in the eyes of the law. As a matter of fact, when a concept is registered, the same is protected from the public domain. Therefore, the Defendants could not be permitted to launch its TV program if the same was based on the concept of Swayamvar, conceived by the Plaintiff. The Court further opined that it would have been easier for this Court if the salient features of Shubh Vivah had been disclosed by the Defendants before this Court.

What had been disclosed before this Court by the Defendants was that they were not providing a platform to young woman to choose a spouse from a pool of potential suitors, there was no involvement of parents either of the girls or of the suitors, there was also no a reward after the courtship concluded nor were there gifts given to the espoused couple. What is important to note is that Shubh Vivah is based on the thrill of matchmaking. The concept of spouse selection in any form as a reality TV show could not be permitted as that had been conceived by the Plaintiff at the first instance. To depict matchmaking in the form of a reality TV show or spouse selection was the theme of the concept. How it is done, who plays the anchor person, whether gifts were given or not, may be the various elements which may differ but if Shubh Vivah was based on the matchmaking process to be televised as a real life drama, the Defendants could not reap the fruits of labor put in by the Plaintiff. The Courts, satisfied that the Plaintiff had prima facie proved that the Defendants were aware of the concept of Swayamvar, and hence had infringed his copyright, granted the injunction. In this case court held that an idea per se has no copyright. But if the idea developed into a concept fledged with adequate details, then the same is

capable of registration under the copyright act[79].

---

[79] Ibid.,

III.   FAIR USE OF COPYRIGHTED COMPUTER PROGRAM

3.1.   DOCTRINE OF FAIR USE

This chapter deals with the doctrine of fair use developed over the years as courts tried to balance the rights of copyright owners with society's interest in allowing copying in certain, limited circumstances. Fair use is an important concept in copyright law. It is a central part of copyright act. Fair use means without the permission or without the consent of the right holder any persons can use of the copyrighted work. As part of copyright law's overall balance between authorial incentives and public freedom, the fair use doctrine "permits and requires courts to avoid rigid application of the copyright statute, when, on occasion, it would stifle the very creativity that law is designed to foster. For all its acknowledged importance, however, the fair use doctrine is difficult-some say impossible to define.

3.2.   FAIR USE/ FAIR DEALING

Fair use is a legal doctrine used in the United States. It permits limited use of copyrighted material without acquiring permission from the rights holders. It is not merely a defense to an infringement claim, but an expressly authorized right, and an exception to the exclusive rights granted to the author of a creative work by copyright law.[1]

Fair dealing is an exception to the exclusive right granted by copyright law to the author of a creative work. It permits reproduction or use of copyrighted work in a manner, which, but for the exception carved out

---

[1] Lenz v. Universal music corp. 801 F.3d 1126 (2016), In February 2007, Stephanie Lenz posted on YouTube a twenty nine second clip, of her 13 month old son dancing to Prince's song "Let's Go Crazy". The audio was of poor quality, and the song was audible for about twenty seconds of the twenty nine seconds. In June 2007, Universal, the copyright holder for "Let's Go Crazy", sent YouTube a takedown notice in compliance with DMCA requirements, claiming the video was a copyright violation. YouTube removed the video, and notified Lenz of the removal and the alleged infringement.

would have amounted to infringement of copyright.[2] Before going to see about the fair use we must know about the brief history of copyright.

3.2.1.   FAIR USE: HISTORICAL BACKGROUND

The term, "fair use," first arose in the American judicial system in the cases of Lawrence v. Dana[3] in the year 1869 for the situation; Lawrence sued Dana for infringement on Lawrence's copyrights. Lawrence had altered and commented on two volumes of Wheaton's Elements of International Law, memories of the deceased Mr. Wheaton (Lawrence did this needlessly for the creator's wife, Mrs. Wheaton and her children, who had been left in "direct conditions". At the season of the claim, Mrs. Wheaton had passed on and an alternate distributor had distributed the journals with no book keeping to Lawrence. The court noticed that Lawrence's explanations and altering "included extraordinary research and work" and eventually found the use of Lawrence's materials not to be fair. While Dana Contended that they had only compressed, or fairly used, Lawrence's materials, the court said the use was significantly more than a fair use; it was truly a republish. In early English cases, the fair use concept known as "fair abridgment".

Fair use has been recognized globally, in some form, since the earliest intellectual property regimes: "Most national laws recognized exceptions and limitations on the exercise of rights, for example, for educational or religious purposes". While "fair use" as a "name" did not appear in American courts until 1869, the English concept was appropriated in the U.S. 1841 case of Folsom v. Marsh[4] solved the main issue whether defendant's

² ²·S.K.Dutt v.Law Book Co. & Ors. AIR 1954 ALL 750. S.K. Dutt, an advocate practicing in Court, has filed suit purporting to be one under Section 13, Copyright Act1914. The plaintiff alleges that he is the author and sole owner of the copyright in the work entitled "The Indian Partnership Act by Mukerji and Dutt". This work, the plaintiff alleges, he published in the year 1934 in collaboration with Sir Manmotho Nath Mukerji, an ex-Chief Justice of the High Court at Calcutta and an ex-Law Member of the Government of India.

³ Lawrence v. Dana 15 F. Case 26, 51 (C.C.D. Mass.) 1869.

⁴ Folsom v. Marsh, In Folsom, 9 F. Cas. 342 (C.C.D. Mass 1841), the defendant wrote a biography of George Washington but used 353 pages of plaintiff's earlier published and copyrighted multi volume work to do so. Although the defendant's use amounted to less than 6% of the plaintiff's total work, the court held for the plaintiff, finding the defendant had copied the most important material (i.e., substantiality) in plaintiff's earlier volumes. In the opinion, Justice Story set the framework that was codified over 130 years later in verbatim use of the protected letters constituted an "act of piracy" under the 1841 copyright law. Holding the court found that defendant's use of plaintiff's letters was not fair use. In reaching this conclusion, the court recognized principles that are the foundations for the modern fair use doctrine, stating: "In short, we must often, in deciding questions of this sort, look to the nature and objects of the selections made, the quantity and value of the materials used, and the degree in which the use may prejudice the sale, or diminish the profits, or supersede the objects, of the original work. The 1841 Folsom case was followed by other cases that laid a foundation for the drafting of the 1976, Copyright Act's Section 107. In 1976 the thought of adopting a statute crystallizing fair use was revolutionary. Previously, "no one had ever come up with a satisfactory definition of fair use". Pursuant to a1961 list prepared by the federal Copyright Office, "fair use" included

"Quotation of excerpts in a reviewer criticism for purposes of illustration or comment. Quotation of short passages in a scholarly or technical work, for illustration or clarification of the author's observations. Use in a parody of some of the content of the work parodied. Summary of an address or article, with brief quotations, in a news report. Reproduction by a library of a portion of a work to replace part of a damaged copy. Reproduction by a teacher of a small part of a Work to illustrate a lesson. Reproduction of a work in legislative or judicial proceedings or reports. Incidental or fortuitous reproduction, in a newsreel or broadcast, of a work located at the scene of an event being reported." (Lardner, 1986, pp. 23–24).

Once the existing discourse of fair use was folded into the 1976 statute by way of the four factors test, the courts began applying the factors. Court interpretation is key to understanding the fair use statute, but the U.S. Supreme Court has not interpreted fair use in an educational context. Fair use has been considered four times by the Supreme Court since the enactment of U.S. Copyright Act of 1976.The Sony case measured the reach of the new 1976 fair use statute. In Sony Corp of America v. Universal Studios, Inc.⁵ the court held that sale of VCRs

---

Section 107 of the 1976 Copyright Act. Story wrote (I have emphasized language that can be tied into the 1976 codification and presentday four-factor analysis)

⁵ Sony Corp. of America v. universal city studios, 464 U.S. 417, 1984 (Sony) (Defendant) marketed Betamax videocassette recorders (VCRs or VTRs), which allowed home recording of televised programs. Several movie studios (Plaintiff), holders of copyrights on did not equal contributory infringement of Universal Studio's copyrights. Applying the four-factor test, the court found that even though entire shows were taped (referring to factor three, portion used), because most use was legal, private taping and later viewing of broadcasts only amounted to time-shifting (referring to purpose and character of the use), and Universal Studios failed to establish harm to potential markets (referring to factor four, effect on potential market): This use was fair.

The Sony court held that because substantial non-infringing use of VCRs existed (legal taping), the court would not stop Sony from manufacturing and distributing its technology. Sony was not liable for the infringing users' actions. Harper & Row, Publishers, Inc. v. Nation Enterprises⁶ in the year 1985 court held that prior publication of a work pending publication will not be a fair use reversed. The common law doctrine of "fair use" is well established. The Supreme Court recognized the doctrine as early as 1841. In Folsom v. Marsh, Justice Story allowed use of quotes by a reviewer as a "fair use." A major application of the doctrine remains to be the use of quotes in criticism of a work.⁷ In Stewart v. Abend⁸ in the year 1990 the court held the film was not a "new work" falling under the protection of fair use.

---

televised movies and other televised programs, brought an action for contributory copyright infringement on the theory that Defendant was contributory liable for infringement by consumers of VTRs of the studios' (Plaintiff) copyrighted works on the basis of Sony's (Defendant) marketing and distribution of the VTRs. The district court, finding, inter alia, that no Sony (Defendant) employee had either direct involvement with the allegedly

infringing activity or direct contact with purchasers of Betamax who recorded copyrighted works off-the-air, and that there was no evidence that any of the copies made by individuals were influenced or encouraged by Defendant's advertisements, held that Defendant was not liable for direct or contributory copyright infringement. The court of appeals reversed.

[6] Harper & Row Publishers inc. v. Nation Enterprises, 471 U.S. 539 (1985); (Harper) (Plaintiff) obtained the rights to publish President Ford's memoirs, A Time to Heal. Time magazine contracted for the rights to preview the work immediately before publication. Before the publication of the article by Time magazine, Nation Enterprises (Defendant), publisher of The Nation magazine, got a copy of the Ford manuscript. The Nation published an article that quoted the manuscript about the Nixon pardon. Time then choose not to use the article as planned and canceled its contract with Harper (Plaintiff). Plaintiff sued Defendant for copyright infringement. The district court awarded damages for infringement. The Second Circuit reversed, holding Nation Enterprises' (Defendant) use to be a "fair use" under 17 U.S.C.107. The United States Supreme Court granted certiorari.

[7] Ibid.,

[8] Stewart v. Abend 495 US 207 (1990); the court focused on copyright protection of the owner's exclusive right to In the year 1992 United States decided the case Atari Games Corp. v. Nintendo of Am. Inc.,[9] stated that an arbitrary data stream in a lock-out device was not dictated by function and could be copyrighted, and provided support for the copyright ability of protocol elements themselves.

The four factors were taken into account by the court: The infringing work was commercial (factor one, purpose of the use), the original work was creative rather than factual (factor two, nature of the copyrighted work), and the re-release harmed the copyright holder's ability to find new markets (factor four,

effect on market). In Campbell v. Acuff-Rose Music Inc.[10] in the year 1994, in this case, The court additionally failed in holding that 2 Live Crew (Defendant) had duplicated unnecessarily from the Orbison unique, considering the satiric motivation behind their rendition. Switched and remanded to assess the sum taken from the first, its transformative components, and potential for market hurt.

Create derivative works and did not find fair use. Cornell Woolrich is the author of "It Had to be Murder," and Rear Window is based largely on Woolrich's story. When MCA re-released the film, suit was brought.

[9] Atari Games Corp. v. Nintendo of Am. Inc., 975 F. 2d 832 (Fed. Cir. 1992) manufactured the Nintendo Entertainment System (NES). NES was a home video game console that allowed individuals to play video game programs stored on video game cartridges. Nintendo owned the copyrights in the source and object code for a program called 10NES. The 10NES program facilitated a "lock" and "key" mechanism that allowed Nintendo to prevent its NES console from reading and playing video game programs on video game cartridges other than those that Nintendo had authorized. Because of the 10NES program, Nintendo was able to exact licensing fees from manufacturers that sought to develop video game programs capable of playing on the NES console.

Nintendo's competitors, Atari Games Corporation and its wholly-owned subsidiary, Tengen, Inc., replicated the 10NES program's object and source code, thereby making it possible to manufacture and sell video game cartridges that were compatible with the NES console without paying licensing fees to Nintendo. To replicate the 10NES object code, Atari obtained authorized copies of NES game cartridges and consoles and "reverse engineered" the object code contained in the microchips therein. Atari also gained access to an unauthorized copy of the 10NES source code by submitting false information to the U.S. Copyright Office. While in the process of "reverse engineering" the 10NES program, Atari made multiple intermediate copies of both the program's source and object code. Atari sued Nintendo for, among other things, antitrust violations, and Nintendo sued for, among other things, copyright infringement of the 10NES program. After consolidating the two cases, the district court preliminarily enjoined Atari from exploiting Nintendo's 10NES program. [10] Campbell v. Acuff-Rose Music, Inc.; 510 U.S. 569 (1994) 2 Live Crew (Defendant) recorded a rap parody of the hit by Roy Orbison, "Oh, Pretty Woman." Acuff-Rose (Plaintiff), the copyright holder of the original song, brought suit against 2 Live Crew (Defendant) for copyright infringement. The district court granted summary judgment for 2 Live Crew (Defendant), concluding that its song made fair use of Orbison's original. The appeals court reversed and remanded. It concluded that every commercial use is presumptively unfair and the blatantly commercial purpose of 2 Live Crew's (Defendant) version prevented it from constituting fair use. Defendant appealed.

Under the TRIPs agreement there are three factors have to be seen while fixing the limitation and exception to the exclusive rights. They are i) the existence of special case or circumstances ii) Not unreasonably prejudice the legitimate interest of the right holder. iii) Not conflict with a normal exception of the work.[11] For certain socially-benefits uses, such as criticism, comment, news reporting, teaching (including multiple copies for

classroom use), scholarship, or research, the copying of copyrighted works is considered legal so long as the use does not deprive the copyright owner of appropriate rights and economic rewards. These are known as "Fair use" of the copyrighted works and are a major exception to an author's exclusive rights to reproduce a copyrighted work or to create a derivative work.

Under Berne Convention Article 9.2[12] says that possible exceptions. It shall be a matter for legislation in the countries of the Union to permit the reproduction of such works in certain special cases, provided that such reproduction does not conflict with a normal exploitation of the work and does not unreasonably prejudice the legitimate interests of the author.

3.3. REVERSE ENGINEERING OF COPYRIGHTED COMPUTER PROGRAM U.S, EU, AND INDIA

Reverse engineering is defines as staring with known product and working backward to know the process which aided in its development or manufacture.[13] Reverse engineering is taking apart an object to see how it works in order to duplicate or enhance the object. The practice, taken from older industries, is now frequently used on computer hardware and software. Software reverse engineering involves reversing a program machine code (the string of 0s and 1s that are sent to the logic processor) back into the source code that it was written in, using

---

[11] TRIPs Agreement, Art 13- limitations and exceptions

[12] Berne convention for the protection of literary and artistic works Article 9.2

[13] Kewanee Oil Co. v. Bicron Corp., 416 US. 470,476 (1974). Kewanee Oil Co. (Plaintiff) brought a diversity action seeking injunctive relief and damages for the misappropriation of trade secrets. The district court applied Ohio state law and granted a permanent injunction against the disclosure of twenty of the claimed forty trade secrets until such time as the trade secrets had been released to the public. The Court of Appeals for the Sixth Circuit reversed, holding that state trade secret protection was preempted by operation of the federal patent law. The United States Supreme Court granted certiorari.

---

program language statements. Reverse engineering is a procedure for understanding the structure and usefulness of programming, given the source code. Thus, reverse engineering is regularly utilized for seeing new advancements by a contender and accomplishing similarity between two items or programs." Goals of reverse engineering incorporate creating contending programming or equipment peripherals and good new items, revealing the shortcomings of items, and fulfilling inert curiosity.

In typical software development process computer programs are at first written in an alphanumeric language that comprises of words what's more, arithmetical expressions significant to people (source code). The source code is then deciphered or gathered by a utility program into a computer intelligible code (object code). Reverse engineering includes acquiring either the first source code or point by point composed determinations from the first developer. Else, it must be embraced freely by decompiling the object code once again into the source code. As a handy matter, it might be difficult to reverse build a computer program without decompiling the object code back into a proportionate source code adaptation. As for reasonable utilize contentions in copyright law, it is huge to comprehend that the procedure of decompilation generally cannot be achieved without at some point making copies of the original program".

Software reverse engineering was separated into two noteworthy classifications: creating noncompeting versus contending programs. Inside this qualification, there are numerous sub distinctions including making copies for utilizing part or all ensured components[14] of the error correction, improvement, functional equivalents and interoperability. Making a copy is a prima facie case of infringement because the initial result of the process of

---

[14] Browers v. Baystate Technologies inc., 320 F.3d 1317 (2003) Harold Bowers (plaintiff) sold a software program that included a shrink- wrap license that prohibited users from reverse Bowers offered to work with Baystate Technologies, Incorporated (Baystate) (defendant), but Baystate refused, thinking it could develop its own software. Baystate subsequently sold a competing software program with similar features to Bowers's program. Baystate sued Bowers for a declaratory judgment to establish non infringement, invalidity, or unenforceability of Bowers's patent. Bowers counterclaimed, alleging copyright infringement and breach of contract. After a trial, the jury determined that Baystate had infringed Bowers's contract and had breached the terms of the shrink-wrap license by reverse engineering Bowers's code. Baystate appealed.

---

reverse engineering is substantially similar to the protected work. When it comes to the purposes of functional

equivalents and interoperable products, however, the fair use defense for intermediate copying occurring during decompilation may be considered. Through copyright and patent legislation, Congress and the courts have recognized the proprietary nature of software programs."

The purpose and character of the use include whether such use is of a commercial nature or is for nonprofit educational purposes.[15] The nature of the copyrighted work[16] fair use favors the use of factual, non-fiction materials. Creative work, such as fiction, poetry, painting, dance, etc. highly favors asking permission. Using published work is far safer than using unpublished work as it favors the exclusive right of a copyright holder to designate when and where a work was or is to be published.

The amount and substantiality of the portion used in relation to the copyrighted work as a whole[17] fair use evaluation is more likely to be favored when small amounts of protected material are used. This is not, by any means, absolute. Should the essence of the work in question be a small portion of a larger piece, infringement may be a possibility. Any case that is even the slightest calls for asking permission from the copyright holder before proceeding. The effect of the use upon the potential market for or value of the copyrighted work. A fair use analysis is more likely to be favored when its intended use has only a negligible market impact on the author's earning potential. The fact that a work is unpublished shall not itself bar a finding of fair use if such finding is made upon consideration of all the above factors.[18] These four factors are mentioned in the Sega v. Accolade case.

The statutory framework for fair dealing in India follows the common law and, as noted earlier, does not define fair dealing per se. The legal provision for fair dealing provides that:

---

[15] Ibid.,

[16] Ibid.,

[17] Ibid.,

[18] Ibid.,

The following acts shall not constitute an infringement of copyright, namely:

In Indian copyright law fair dealing divided into seven they are i) fair dealing of work ii) permissible use of computer program iii) use by judiciary, legislature, and government iv) educational purpose v) use by library vi) cultural and religious use vii) use for disable person. In section 52 says about fair dealing they are private or personal use, including research, criticism or review, the report of current events and affairs, the making of copies or adaptation of a computer program by the lawful possessor of a copy of such computer program.[18] In order to utilize the computer program for the purpose for which it was supplied or to make back-up copies purely as a temporary protection against loss, destruction or damage in order only to utilize the computer program for the purpose for which it was supplied.

The doing of any act necessary to obtain information essential for operating inter-operability of an independently created computer program provided that such information is not otherwise readily available.[19] The observation, study or test of functioning of the computer program in order to determine the ideas and principles which underline any elements of the program while performing such acts necessary for the functions for which the computer program was supplied.[20] The making of copies or adaptation of the computer program from a personally legally obtained copy for non-commercial personal use.[21] The Indian laws related to "fair dealing" is always considered rigid and conventional as it provides an exhaustive list and any use falling out of the statutory list is considered as an act of infringement.

In Europe Software Directive Article 5 says about Exception to the restricted acts. In the absence of specific contractual provisions, the acts referred to in points (a) and (b) of Article 4(1) shall not require authorization by the right holder where they are necessary for the use of the computer program by the lawful acquirer in accordance

---

[18] The Copyright Act, 1957 sec 52 (a) (i) (ii) (iii) (aa).

[19] Ibid., sec (ab)[20] Ibid., sec (ac)[21] Ibid., sec(ad)

---

with its intended purpose, including for error correction.[22] The making of a back-up copy by a person having a right to use the computer program may not be prevented by contract in so far as it is necessary for that use.[23] The person having a right to use a copy of a computer program shall be entitled, without the authorization of the right holder, to observe, study, test the functioning of the program in order to determine the ideas and principles which underlie any elements of the program if he does so while performing any of the acts of loading, displaying, running, transmitting or storing the program which he is entitled to do.

3.4. TYPES OF REVERSE ENGINEERING

3.4.1.   Black-Box Analysis[24]

A computer program is contribution to a computer, and in working a black-box investigation, the way in which the computer capacities and the yield which is produced is watched while being run.[25] The black-box examination may take a few shapes. For instance, a black-box examination should be possible by transitionally stacking the program in the computer memory, running it, and after that survey the screen displays.[26] Those thoughts and useful ideas fundamental word handling programs, spreadsheets, and computer game presentations are promptly recognizable without requirement for decompilation on the grounds that the outside articulation of the question code is obvious on the computer screen. Be that as it may, those utilitarian components of computer programs that keep running out of sight, for example, fundamental information yield framework programs (BIOS) and working frameworks can't be promptly observed amid the operation of the program.

---

[22] European Software Directive, Article 5, 1. Exceptions to the restricted acts.

[23] Ibid., at Article 5, 2.

[24] article 5(3) of the eu software directive

[25] Meninsky, Carla. "Locked Out: New Hazards of Reverse Engineering" 21 J. Marshall J. Computer & Info. L. 591 (2003). (by capturing the input and output of the computer program, a software engineer may be able to try to isolate any commonalities or patterns that emerge, particularly at start-up time; in a further step the software developer mimics the exact sequence observed in his new product). [26] Spoor; Jaap H. "Copyright Protection and Reverse Engineering of Software: Implementation and Effects of the EC Directive" 19 U. Dayton L. Rev. 1063 (1994). (nailing down black-box testing as an attempt to find out from the outside how the computer program works in the inside).

Accordingly, another technique for the black-box examination is running the program in an imitated condition, along these lines watching the operation of the program through the utilization of another program known as a "debugger". Through either handle, without ever looking at the source or object code of the program,[27] it may be possible to determine how the program is designed and what it accomplishes, thereby enabling a programmer to produce (i.e., reverse engineer) a program which operates similarly.[28]

From the technical perspective, research and diagnosis by means of a black-box analysis is principally based on mere reasonable guesses as a result of the observations by the software developer.[29] From the legal perspective, it is noteworthy that, unlike acts of decompilation, a black-box analysis ex lege is not limited to ends of interoperability. The challenge for copyright lies with another, technical, aspect of the black-box analysis. Regardless of the method of observation used, the computer program is copied each time the reverse engineer boots up the computer, and requires the computer, as an intermediate step in the black-box reverse engineering process, to copy the program into computer memory.

As a rule, copying the computer program to be analyzed is subject to Article 4(a) of the EU Software Directive according to which the permanent or temporary reproduction of a computer program by any means and in any form, in part or in whole, whether caused by loading, displaying, running, transmission or storage of the computer program, requires the right holder's authorization to do so.[30]

---

[27] Whenever the process entails the transformation of object code into source code, the process is subject to Article 6 of the EU SoftwareDirective. Vinje, Thomas C. "Die EG-Richtlinie zum Schutz von Computerprogrammen und

die Frage der Interoperability " 4 Grur Int. 250 (1992).

[28] Bayha, Betsy E. "Reverse Engineering of Computer Software in the United States, the European Union, and Japan" C137 ALI-ABA175 (1995).

[29] One German commentator characterizes Article 5(3) of the Directive as an "Experimentierklausel". See Marly Jochen.Urheberrechtsschutz für Computersoftware in der Europäischen Union, München: C.H. Beck'sche Verlagsbuchhandlung, 1995.

[30] Council Directive of 14 May 1991 on the Legal Protection of Computer Programs, 1991 O.J. (L 122) 42 et seq. (as amended byCouncil Directive 93/98/EEC) [hereinafter EU Software Directive].art. 4(a), at 44.

Basically, the aforementioned black-box techniques do constitute acts enumerated in Article 4(a).[31] Hence, the black-box analysis to be a legal means in terms of copyright law requires an exception to the general rule.[32] The exception for black-box analyses is laid down in Article 5(3), where observation, study or testing the functioning of the program without submitting encroachments of the creator's selective rights is permitted.[33]

Without the special case the execution of a black-box-investigation, counting middle duplicates, would be liable to the approval of the right holder.

Another special case to the general control is found in Article 5(1)[34] which measures the lawfulness as far as the proposed reason for a computer program. The question is whether there ought to be drawn a lawful qualification between how to utilize also, how to examine a computer code. To put it another way, is a black-box test is secured by the special case put forward in Article 5(1). The appropriate response might be when such examination is comprehended to go past of what is respected important for the utilization of the computer program as per its planned purpose.[35] The appropriate response might be yes when Article 5(3) procedures are thought to be incorporated into the utilization of the objective program copy.[36] Taking everything into account, for some product

---

[31] For example, a test run requires loading and running of a computer program according to Article 4(a) and also "hex dump"(i.e. studying the hexadecimal object code) requires loading onto the main memory in order to be displayed on screen.

[32] EU Software Directive art. Supra note 35, at 5(3), reads as follows: "3. The person having a right to use a copy of a computer program shall be entitled, without the authorization of the right holder, to observe, study or test the functioning of the program in order to determine the ideas and principles which underlie any element of the program if he does so while performing any of the acts of loading, displaying, running, transmitting or storing the program which he is entitled to do."

[33] Walter, Michel M. (ed.). Europäisches Urheberrecht, Wien: Springer Verlag, 2001 , at 216.

[34] EU Software Directive Supra note 35 art 5(1), reads in full text: "In the absence of specific contractual provisions, the acts referred to in Article 4 (a) and (b) shall not require authorization by the right holder where they are necessary for the use of the computer program by the lawful acquirer in accordance with its intended purpose, including for error correction" (emphasis added).

[35] Walter, supra note 38 at 198-9.

[36] Ullrich, Hanns, & Körner, Eberhard. Der internationale Softwarevertrag, Heidelberg: Verlag Recht und Wirtschaft Gmbh, 1995.(affirming that approach by reasoning that otherwise it would be a tautology since the person who has the right to use a copy of the target program anyway is entitled to uncover un copyrightable ideas and principles underlying the target program).

---

black-box testing might be lacking and decompilation may move toward becoming necessary[37]keeping in mind the end goal to see how the program gets its directions and how it works.

A software programmer's endeavors to utilize decompilation to acquire data on grouping, structure and association of the program will be measured with respect to whether non-encroaching means under Article 5(3) could have uncovered the same information.[38] Under such conditions, "vital" techniques, for example, decompilation is thought to come in legally, specifically under the safe house of Article 6. Be that as it may, then again, Article 5(3) can never be connected to allow demonstrations of decompilation.[39] Essentially, the ambit of Article 5(3) is limited to black-box examinations, while Article 6 exclusively applies to demonstrations of decompilation. As a result of the qualification, Article 5(3) is not limited to the finish of interoperability. Article 5(3) exempts examinations of thoughts and principles[40] fundamental "any component of the program" by watching, testing or concentrate the client surface.[41]

The broadly useful behind Article 5(3) is to concede least access to unprotectable thoughts and standards hidden a computer program. The product provider accordingly may well accommodate such access through methods

---

[37] Black box analysis involves subjecting a program to certain input conditions, and monitoring its output in an attempt to better understand its function. Decompilation on the other hand is a much more intrusive act, involving the conversion of the machine-readable object code back to source code. See Marc A. Ehrlich, Fair Use or Foul Play? The EC Directive on the Legal Protection of Computer Programs and Its Impact on Reverse Engineering, 13 Pacel. Rev. 1003, 1005 (1994).

[38] Czarnota, Bridget, & Hart, Robert J. Legal Protection of Computer Programs in Europe—A Guide to the EC Directive, London, Dublin, Edinburgh, Munich: Butterworths, 1991. , at 78.

[39] Vinje, Thomas C. "Die EG-Richtlinie zum Schutz von Computerprogrammen und die Frage der Interoperabilität" 4 Grur Int. 250 (1992), at 253 (Article 5(3) was introduced as compromise between those industry groups in favor of allowing decompiling computer software and those against it).

[40] Article 5(3) distinguishes between observing program functions which is permitted and studying of the program itself which is not permitted. However, since the Article follows the general copyright rule that ideas and principles are not copyrightable subject matters, the search for ideas and principles underlying the program

---

itself is covered by the rule is no copyright infringement.
[41] Ullrich, supra note 41 at 75-6 (aptly headlining the provision of Article 5(3) "program analysis" and that of Article 6 "interoperabilityanalysis").

others than those enrolled in Article 5(3). Be that as it may, Article 5(3) must not go past of what is permitted under Article 6 as the peripheral limit.[42]

3.5.   DE COMPILATION

Without decompilation an engineer cannot do reverse engineering. Decompilation is the process by which ideas and techniques as functional elements embodied in computer program code are made available by means of an operation.**[43]** In specialized terms**,** programming developers may experience distinctive operations of how to access the source code, for example, decompilation, dismantling, black-box testing or a "clean room" system. In changing the normal unevenness, programming developers utilize gadgets called "decompilers"[44] or "disassemblers"[45] to peruse the "zeros" and "ones" that are created while the program is run. The subsequent object code variant is putaway in computer memory. Finally, the object code is converted into source code.[46] The meaning of interpretation done in the reverse procedure of decompilation and dismantling alludes to change implying that the first target program code must be utilized as a model for the new program, it should in any event be alluded to by the reverse engineer.[47] The item therefore of decompilation or dismantling is a harsh and prepared doppelgänger of the first source code, giving a comprehension of, in any event, much if not the majority of the structure and operation of

---

[42] Id., at 76-7.
[43] Bainbridge, David I. Software Copyright Law, London: Pitman Publishing (1992). at 113.
[44] Decompiling a computer program to retrieve the original high-level language source code requires knowledge of the exact version ofhigh-level language.
[45] Disassembly unlocks the ideas and techniques embedded in the object code version of aprogram and produces assembly languagefrom the object code version of the target program. Id.
[46] Walter, supra note 38, at 210-1, 232 et seq.
[47] Bainbridge, David I. Software Copyright Law, London: Pitman Publishing (1992). supra note 4 ,at 109.

---

the decompiled computer program.[48] It is either method or not the last result of reverse engineering that is flawed in legitimate terms.**[49]**

3.6.   PURPOSE OF DECOMPILATION

Decompilation for reverse engineering closures may have a few purposes, either business or non-business: determination (i.e., research and blunder adjustment), interoperability, and competition.[50] The learning gotten through the reverse process might be utilized for research and training, which essentially does not include making a consequent work. Other than pilfering a computer program's ensured expression, which will surely viewed as encroaching act, a contender may legitimately copy a computer code with the end goal of deciding the program's unprotected interface determinations keeping in mind the end goal to create non-encroaching, however contending, programs that work on computers running the copyrighted program.[51] The perfect item might be expected to connect with either the basic program or the stage whereupon it works. Ultimately, transitional replicating may bring about outlining a contending program which may fill in as a direct substitute for the basic program.
A respondent contender who copies or alters computer code through demonstrations of decompilation will in all probability meet with abhorrence, yet particularly, if the reverse engineered program in view of the "fair use" in

---

[48] Nimmer, ON COPYRIGHT, sec13.05(D)(4), at 13-230.18; see also E.F. Johnson Co. v. Uniden Corp., 623 F. Supp. 1485, 1488-90 (D. Minn. 1985) (indicating that decompilation does not yield a perfect copy of the source code, but can afford an understanding of muchof the structure and operation of a program).
[49] Johnson-Laird, Andrew. "Software Reverse Engineering in the Real World" 19 U. Dayton L. Rev. 843 (1994). (citing cases in which the legal status of reverse engineering is conditional upon the process of decompilation itself rather than the resulting product).

[50] Haberstumpf in Lehmann, Rechtsschutz und Verwertung von Computerprogrammen [Legal Protection and Use of Computer Programs] (1993) 76-7. at 159; see also Samuelson , Pamela, & Scotchmer,&, Suszanne. "The Law and Economics of Reverse- Engineering" 111 Yale L.J. 1575 (2002)., at 1582 (indicating that there may be diverse reasons for reverse engineering, with the purpose of making a competing product as the most common because most economically significant reason to reverse-engineer in the industrial context); Johnson-Laird supra note 7,at 846

[51] Id.,

the United States allows new conditions to be brought into the plan of copyright security and its special cases so as to have the capacity to maintain the insurance for decompilation. In spite of the adaptability of a fair use origination that would allow new conditions, as happening in the advanced world every now and again, to be brought into the classes secured by existing exceptions,[52] such approach would fit uneasily in common law customs of the majority of the EU Member States. Information decompiled reaches the market.[53] Naturally, that proves the most controversial use of interface information discovered through decompilation.[54]

3.7. DECOMPILATION UNDER EUROPEAN COPYRIGHT LAW

As earlier as in 1988,[55] the Commission tended to in its Green Paper the contentious legitimate nature of decompiling computer software,[56] and was not perplexed of bringing up the issue whether copyright security ought to apply to get to conventions what's more, interface data of computer programs.[57] The subsequent drafting of a arrangement turned into a political fight over how the appropriate response should resemble. When the EU Software Directive has been faced off regarding, the as of late instituted enactment in the United Kingdom, France,

[52] Czarnota & Hart supra note 44.

[53] Goldstien Paul. Goldstein on Copyright, New York, NY: Aspen Publishers, 2007 (3rd ed.).

[54] Celine M. Guillou, The Reverse Egineering of Computer Software in Europe and the United States: A Comparative Approach, 22 COLUM.-VLA J.L. & ARTS 533 (1998).

[55] As a result of the increasingly harmful effects of piracy on the market and the urgency of unifying and harmonizing the laws of the Member States, potential alternatives for protecting software were addressed in the 1988 European Community Commission's Green Paper on Copyright and the Challenge of Technology, which solicited comments on a number of key issues regarding software protection, inter alia, reverse engineering Commission Green Paper on Copyright and the Challenge of Technology at Para. 5.5.7. et seq. As a result of the increasingly harmful effects of piracy on the market and the urgency of unifying and harmonizing the laws of the Member States, potential alternatives for protecting software were addressed in the 1988 European Community Commission's Green Paper on Copyright and the Challenge of Technology, which solicited comments on a number of key issues regarding software protection, inter alia, reverse engineering.

[56] Jongen Herald D.J., & Meijboom, Alfred P. (eds.). Copyright Software Protection in the EC, Deventer-Boston: Kluwer Law and Taxation Publishers, 1993, at 14-5.

[57] Walter J. Jaburek, Dasneue Software-Urheberrecht [The New Software Copyright Law] (1993) 21.

Germany, Spain and Denmark contained any express arrangement on reverse engineering all in all or on decompilation in particular.[58] Neither did the U.S. law at that time. The European Communities with the position taken by the United States, the European legislators[59] counseled the U.S. Diplomat in the early piece of the civil argument on an arrangement of decompilation in the EU Software Directive.[60] The U.S. government demonstrated that under U.S. copyright law decompilation was not allowed without approval of the program proprietor unless excused by the arrangements of the fair use precept or as a go down duplicate under segment 117 of the U.S. Copyright Act of 1976. Be that as it may, it was additionally recognized that case law has then not gave any cases in which fair use had been connected to decompilation.[61] That the starting Proposal for the EU Software Directive needed for an appropriate special case allowing decompilation.[62] The quiet on the admissibility of reverse engineering exposed the further drafting process to intense lobbying efforts by groups representing diverse interests in the software industry.

[58] Czarnota & Hart supra note 44, at 75.

[59] The European Commission is composed of representatives from each Member State and is divided into Directorates General of varying size which individually deal with matters of concern to the European Communities. The Commission initiates the legislative process and presents an initial proposal to the Council of Ministers consisting of members who are appointed by their respective national governments. After the Council

reaches a consensus on the proposal, it is reviewed, debated, amended if necessary, and written as draft legislation by the European Parliament, which is typically divided into sub-committees. If the Parliament recommends adoption of the draft, it is then returned to the Commission which, in turn, submits the amended proposal to the Council. The Council works to reach a so-called common position or draft form of the proposal it is willing to adopt. This draft is then returned to the Parliament for a second reading. Parliament issues its final recommendations for adopting, rejecting, or amending the common position so that the Council can officially adopt or reject the proposal. Once a Directive is adopted by the European Communities, the Commission ensures proper implementation of the Directive within Member States' national laws.

[60] Like the U.S. Government, also the Japanese Government was consulted on the treatment of unauthorized decompilation in the course of reverse engineering requesting information on the position in Japan under copyright law. Similarly to the U.S. response, the Japanese Government indicated that the Japanese Copyright Law did not contain any express provision rendering decompilation itself permitted or prohibited. The response further indicated that there was also no express provision in Japanese legislation nor court decision on the decompilation done to gain access to underlying idea and principles.

[61] See Dreier, Thomas. "The Council Directive of May 14 1991 on the Legal Protection of Computer Programs" 9 Intell. Prop. Rev. 319 (1991). (identifying that, prior to 1992, there was not a single case which held decompilation as fair use).

[62] Cf. Proposed Directive, compared with Amended Proposal for a Council Directive on the Legal Protection of Computer Programs,

3.8.　ARTICLE 6 OF THE EU SOFTWARE DIRECTIVE

Debate over programming decompilation the European administrators, at last, figured out how to make a sensibly adjusted legitimate administration of premiums and requirements of the market pioneers in the computer business, person programming programmers and users, fused in Article 6 of the EU Software Directive.[63] The EU official went to regard computer programming as a black-box. Given that within is unique as in it is the creator's close to home creation, the black-box will appreciate copyright security under Article 1 of the EU Programming Directive.[64]

Every look into the box is definitely gone before by, in any event interval, duplicating in the copyright sense, and consequently is illegal spare with the copyright proprietor's approval which is the embodiment of Article 4 of the Mandate. Just in two examples second comers may need to investigate the black box by method for decompilation: for revising mistakes (Article 5(1)), and for accomplishing interoperability (Article 6). Not at all like the United States, the EU Software Directive does not seek after a fair use approach,[65] but instead tended to the issue of decompilation specifically. The thought behind Article 6 is that decompiling computer software[66]by and large might not be allowed, however is approved in restricted circumstance.[67]

---

[63] Rotenberg, Boris. "The Legal Regulation of Software Interoperability in the EU" NY Jean Monnet Working Paper No. 07/2005 (2005).

[64] EU Software Directive, art. 1, reads in full text:

"1.In accordance with the provisions of this Directive, Member States shall protect computer programs by copyright, as literary works within the meaning of the Berne Convention for the Protection of Literary and Artistic Works. For the purpose of this Directive, the term 'computer programs' shall include their preparatory design material.

2.　Protection in accordance with this Directive shall apply to the expression in any form of a computer program. Ideas and principles which underlie any element of a computer program, including those which underlie its interfaces, are not protected by copyright under this Directive.

3.　A computer program shall be protected if it is original in the sense that it is the author's own intellectual creation. No other criteria shall be applied to determine its eligibility for protection

[65] discussion of the fair use doctrine under U.S. copyright law

[66] Jaburek, Walter J. Das neue Software-Urheberrecht, Wien: Verlag Medien und Recht, 1993. at 18.

[67] Jongen &Mejiboom supra note 62, 14-5

According to Article 6(1) of the Directive, acts of reproducing the code or transforming the code into whatever level of human readability do not need the authorization of the copyright holder of the program decompiled provided that they are "indispensable" to obtain the information necessary to achieve interoperability of an independently created computer program with other programs."[68] With view to accomplish interoperability to whatever extent the original code may be reproduced as many times as is necessary to arrive at a form which is sufficiently comprehensible to the decompiling software engineer.[69] Besides reproducing and transforming[70] the

code, adaptation of the code is not covered by the exception; i.e., adaptation of the code requires the authorization of the copyright holder, since adaptation is not required in order to derive information.[71]

Additionally, three further conditions must be fulfilled cumulatively.[72] First, the acts must be performed by the licensee or by another person having a right to use a copy of the program, or on their behalf by a person authorized

---

[68] EU Software Directive, art. 6(1), reads as follows:

"1. The authorization of the right holder shall not be required where reproduction of the code and translation of its form within the meaning of Article 4(a) and (b) are indispensable to obtain the information necessary to achieve the interoperability of an independently created computer program with other programs, provided that the following conditions are met:

(a)   these acts are performed by the licensee or by another person having a right to use a copy of a program, or on their behalf by a personauthorized to do so; interoperability

(b)   the information necessary to achieve interoperability has not previously been readily available to the persons referred to insubparagraph (a); and (c) these acts are confined to the parts of the original program which are necessary to achieve interoperability." [69] Czarnota & Hart, supra note 44, at 77.

[70] Only "transformation" of the form of code and not a "translation" into another language is subject to the exception of Article 6.

[71] Ibid.,

[72] Software Directive, supra note 35, art. 6(1), at 45, reads in full text:

"The authorization of the right holder shall not be required where reproduction of the code and translation of its form within the meaning of Article 4 (a) and (b) are indispensable to obtain the information necessary to achieve the interoperability of an independently created computer program with other programs, provided that the following conditions are met:

(a)   These acts are performed by the licensee or by another person having a right to use a copy of a program, or on their behalf by a person authorized to so;

(b)   the information necessary to achieve interoperability has not previously been readily available to the persons referred to in subparagraph (a); and to do so (Article 6(1)(a). Second, the information necessary to achieve interoperability must not previously have been readily available to the persons who might otherwise legitimately perform the acts of decompilation (Article 6(1)(b). As a third condition, the acts of decompilation must be confined to the parts of the original program which are necessary in order to achieve interoperability (Article 6(1)(c).

Because reverse engineering, including decompilation as by-product, implies potentially harm for the owners of the original program, the Directive in turn here further conditions must be fulfilled cumulatively.[73] In turn seeks to provide those owners with substantial protection by, first and foremost, narrowing the range of permissible purposes to interoperability.[74]

3.9.   PURPOSE OF REVERSE ENGINEERING

3.9.1.   Interoperability/Compatibility

Interoperability may be defined as "the logical and, where appropriate, physical interconnection to permit all elements of software and hardware to work with other software and hardware and with users."[75] For purpose of understanding the nature and significance of software interoperability, it may be helpful to distinguish two complementary levels of software:[76]

(c)   These acts are confined to the parts of the original program which are necessary to achieve interoperability."

[73] EU Software Directive, supra note 35, art. 6(2), at 45, reads as follows:

The provisions of paragraph 1 shall not permit the information obtained through its application:

(a)   To be used for goals other than to achieve the interoperability of the independent created computer program;

(b)   to be given to others, except when necessary for the interoperability of the independently created computer program; or

(c)   To be used for the development, production or marketing of a computer program substantially similar in its expression, or for any other act which infringes copyright."

[74] The idea behind Article 6 is that decompilation should not be permitted, but is unavoidable in certain strictly-

---

defined situations. Recital 22 mentions that decompilation is allowed only under "limited circumstances". It is interesting that in the Dutch language this was eventranslated as "rare (zeldzame) circumstances".

[75] EU Software Directive, supra note 35.

[76] Haberstumpf in Lehmann, supra note 56, at 77.

a) Operating system software consists of programs which operate low level functions necessary for any use of a computer (particularly, the operating-system program), back the program creation (for example, compiler and testprograms) and put common services (such as file management, file transfer, formatting) at disposal.

b) Application (user) software, on the other hand, fulfills specific tasks like, for instance, word processing, spread sheet analysis, database creation and maintenance. Operating system software (e.g., Microsoft's Windows operating system or Sega Genesis machine) is the platform on which application software is designed to run (e.g.,Lotus 1-2-3 or Sega's games). Platforms and applications are not just complementary products; they are complementary parts of a system by virtue of their conformity to interfaces necessary for achieving interoperability.[77] In order to make the user software interact with the system software, the computer programmer must get access to the interface information of the system software, the so-called application programming interfaces (APIs).It is the information underlying interfaces that provides the foundation of interoperability.[78]

3.9.2.   Horizontal Interoperability

Horizontal interoperability implies the accessibility of interface data that enables the reverse engineer to build up his own working framework while being good with effectively existing application programming. Programming suppliers unveil interface particulars of such quality and amount as to empower consequent programming designers to investigate the interface data of the working framework important to grow freely their own working framework that is interoperable with other application programs. Subsequently, horizontal interoperability prompts the improvement of autonomously made, contending working frameworks which are perfect with other computer programs yet not really with the decompiled computer program itself. Connected to our previously mentioned illustration that would mean that if IBM gives away the interface determinations of its IBM-BIOS

[77] Samuelson & Scotchmer, supra note 56, at 1615-6.

[78] For illustrating purposes, the way how a word processing program notes in a text file that a certain word shall be printed in bold type,represents an example for such interface information. See Jaburek, supra note 63, at 21.

required to fulfill horizontal interoperability, contending programming designers (for case Apple) can build up their own particular BIOS on which all the client programming, which was originally changed in accordance with the IBM-BIOS as accepted industry standard, (for example, Lotus 1-2-3 and WordPerfect), will keep running as well.[79] With these actualities as a top priority, new application programming suppliers is give an impetus to compose for the (predominant) MS-DOS stage, hereafter fortifying its predominance.[80]

As far as monetary productivity, building up a customer computer working framework is a troublesome, tedious, dangerous and costly approach to look for passage to the aggressive showcase. Why do programming engineers in any case embrace endeavors to enter the horizontal market? With making another non-perfect working framework, in this manner with from the earlier no application ready to keep running on it, programming engineers will experience another obstruction to enter the pertinent market since clients improbable will purchase an working framework without an extensive variety of utilization programs officially accessible, tried and utilized by other users.[81] However, horizontal interoperability with the aftereffect of making the new working framework interoperate with the current assemblage of application programming, particularly one that interoperates with the MS-DOS stage, can decrease those negative impacts and, what's more, give a motivator to embrace the expensiveand hazardous decompilation technique.

3.9.3.   Vertical Interoperability

In order to accomplish vertical interoperability software providers disclose interface information for their given operating system to application software providers to the extent to enable them to create new user programs

[79] Vinje , supra note 45 , at 251-3 (1992).

[80] Another example for horizontal interoperability occurred in the United States, namely in the case Sony, where horizontal access wasaccomplished through reverse engineering that led to the creation of an emulator

that played Sony PlayStation games on a computer.
[81] Boris Rotenberg, The Legal Regulation of Software Interoperability in the EU,

independently.[82] The issue of vertical interoperability was recently discussed in the United States, in Sega v. Accolade [83] case where a competing manufacturer of game cartridges wanted to copy the protected standard embedded in the console as part of the reverse engineering process to ensure that his own-created games would work on that system. Vertical interoperability, in general, effects that in return those application programs will add value to the given platform.[84] In reality, endorsing the purpose of horizontal interoperability implies a threat for dominant providers of operating software that the computer market will open its doors to competing operating systems that were legally reverse engineered. Therefore, dominant software providers will be reluctant to uncover horizontal interoperability and rather induce vertical interoperability. Thus far, absent said otherwise in the Directive and given the Commission communication, the EU Software Directive appears to cover both horizontal and vertical interoperability.

[82] Vertical Interoperability is illustrated in Vinje, supra note 45, at 256, as follows: By virtue of the same market dynamics that heaved the IBM-BIOS to the de facto industry standard for BIOS interfaces, MS-DOS has become the standard operating system program for the IBM-PC in those days. Digital Research reverse engineered MS-DOS with the result of marketing an operating system program, the so-called DR-DOS, in competition with MS-DOS. DR-DOS could operate the same functions as MS-DOS; i.e., DR-DOS interoperated with other software (such as Lotus 1-2-3) and hardware in the same way as MS-DOS. In other words, both operating system programs were interchangeable and thus competing with each other

[83] Sega enterprises ltd. v. Accolade inc. 977 F.2d 1510 (9th Cir. 1992) Sega Enterprises Ltd. (Sega) (Plaintiff) and Accolade, Inc. (Defendant) made and marketed video game cartridges. In order to make its own games compatible with Sega's (Plaintiff) console, Accolade (Defendant) "reverse engineered" Sega's (Plaintiff) video game programs to discover the requirements for compatibility with the console. In order to do this, it first copied Plaintiff's copyright code in its entirety and then disassembled it to see how it worked. Defendant then created its own games for use with Plaintiff's console, but did not copy Plaintiff's programs or use any of its codes. Plaintiff sued for copyright infringement. The district court granted Plaintiff's motion for a preliminary injunction to prevent Defendant from further disassembly of Plaintiff's object codes. Defendant appealed.

[84] Rotenberg, supra note 69, at 11-3.

3.9.4.   Scope of Interoperability

In accordance with Article 6(1) of the EU Software Directive, decompiling the code must be crucial to get the interface data important to make programming interoperable with the decompiled program.[85] One likely the most essential motivation behind Article 6 is, thusly, to go about as a security valve in the occasion that data empowering a moment programmer to build up a program which can interoperate with existing programs is not available.[86] regardless of its hugeness at European level, there has been debate amid the section of the Directive over the significance of interoperability in two regards. While the decompilation exemption systematized in Article 6 is unequivocally limited to interoperability, the Directive does not particularly allow decompilation with the end goal of research.[87] Whether this is planned or essentially an exclusion is not clear.[88]

As one commentator[89] closes that forbidding exploration exercises in the field of programming advancement undermines to contradict Article 3(1)(n) of the EC Treaty, which sets out the Community goal to advance "research and mechanical development."[90] Furthermore, the Directive is silent as to whether or not the purpose of interoperability embraces not only decompilation to be allowed for creating attaching or "interfacing" products

[85] Final wording of Article 6 of the EU Software Directive expressly refers to the industry term "decompilation"—but not "reverse engineering rguably, the Directive may not read too broad as to be intended to cover the process of reverse engineering as a whole

[86] Czarnota & Hart, supra note 44, at 76

[87] Vinje, supra note 45, at 258 (stating that decompiling computer software for the purpose of research or other purposes is not permitted by Article 6).

[88] Guillou, supra note 43, at 533 (comparing the position under EU copyright law to copyright provisions of the U.S. Copyright Act which expressly permits reverse engineering for the purpose of research provided that the fair use test pursuant to section 107 is met); Verstrynge, J. F. "Protecting Intellectual Property Rights Within the New Pan- European Framework—Computer Software", Paper presented at the World Computer Law Congress 1991 in Los Angeles 10 (Apr. 18-28, 1991), reprinted in Rechtsschutz und Verwertung von Computerprogrammen, Lehmann, Michael (ed.)., Köln: Verlag Dr. Otto Schmidt KG, 1993 (2nd ed.).

[89] Marly, supra note 34, at 328.

[90] Article 3(1) of the Treaty Establishing the European Community, 2002. O.J. (L. 325) 33, at 41 [hereinafter EC Treaty], in the pertinent parts reads as follows:

"The activities of the Community shall include, as provided in this Treaty and in accordance with the timetable set out therein:… (n) thepromotion of research and technological development."

but also competitive replacement products for the after-market.[91] The Directive refers to interoperability broadly as functional interconnection and interaction as required to permit all elements of software and hardware to work with other software and hardware and with users in all the ways in which they are intended to function.[92] Somewhere else the Directive expressis verbis defines interoperability as "the ability to exchange information and mutually to use the information which has been exchanged."[93] And so is the general objective of the decompilation exception rule expressed "to make it possible to connect all components of a computer system, including those of different manufacturers, so that they can work together."[94]

Overall, these insufficient definitions of the threshold criterion "interoperability" render the decompilation exception vague in terms of its scope and permissibility. To linguistic inaccurateness was alluded for the first time when the United Kingdom proposed an amendment which, had it finally not been rejected in the Council Common Position,[95] would have permitted decompilation only to the extent necessary to create connecting programs, thereby excluding competing programs from the scope of the interoperability exception.[96] Following debates of

[91] Particularly, the lobbying groups representing customers and small and medium sized software companies pointed out the significanceof a decompilation exception. Gaster, supra note 9, at 15

[92] EU Software Directive, supra note 35, at 43, reads in full text:

"Whereas the function of a computer program is to communicate and work together with other components of a computer system and with users and, for this purpose, a logical and, where appropriate, physical interconnection and interaction is required to permit all elements of software and hardware to work with other software and hardware and with users in all the ways in which they are intendedto function."

[93]Id. at 43, states in full:

"Whereas this functional interconnection and interaction is generally known as 'interoperability'; whereas such interoperability can be defined as the ability to exchange information and mutually to use the information which has been exchanged

[94] Id., at 43, states in full text:

"Whereas an objective of this exception is to make it possible to connect all components of a computer system, including those of different manufacturers, so that they can work together.

[95] Council Common Position (EEC) No. 10652/1/90 of Dec. 14, 1990; also the Business Software Alliance (BSA) buttressed the standpoint of the Council reasoning that the British proposal could threat the development of client PCs.

[96] Marly, supra note 34, at 294 (indicating that under a fair dealing analysis, the permissibility of acts of decompilation turns on the motifs and purposes underlying the decompilation. Whereas acts of decompilation undertaken for non-commercial research purposes

both opposing arguments in the European Parliament,[97] the communication issued by the Commission to the European Parliament, contrary to the British recommendation, indicates that the term is to be construed as encompassing both compatible and competing computer programs.[98]

Hence, a program developed through decompiling the target program may compete with that program provided that the decompilation is done for the purpose of achieving interoperability but not without facing harsh criticism.[99] Another question that occurred in the European Communities is whether the purpose of interoperability may legalize newly developed programs to interoperate with the decompiled program only or with other programs in a way as to communicate and share data ("multi-vendor interoperability").Hence, the independently created program would interoperate with the one which has been decompiled or with others in a system.[100] Again the Directive is unclear. Arguably, 100 per cent compatibility in the sense that an independently created program performs all the functions offered by the decompiled program in exactly the same way, being virtually identical to that program is not demanded by the wording of Article 6 ("cloning").[101] Thus, to determine how broadly interoperability is to be understood, ultimately, lies with the implementing legislation and the courts

are permissible, the development of competing software based on the information of the decompiled program is

not a purpose which will render the decompilation permissible under British copyright law).
[97] Amendments proposed in the first reading period by Mr. Jannsen Van Raay and Mr. García Amigo, 1990 EP DOC 142.529 (A3- 173/17, 18, 21, 23).
[98] Communication from the Commission to the European Parliament of Jan. 18, 1991, Parl. EUR. DOC. SEC (91) 87 Final-Syn. 183, 5 (1991) (clarifying that "decompilation is permitted by Article 6 to the extent necessary to ensure the interoperability of an independently created computer program. Such a program may connect to the program subject to decompilation. Alternatively it may compete with the decompiled program and in such cases will not normally connect to it").
[99] Lehmann supra note 56, at 22 (qualifying the purposes of cost-cutting or facilitating the development of competing programs as beyond of what is meant by the Directive under interoperability); Verstrynge, supra note 78, at 10-4 ("Article 6 does not however permit decompilation beyond what is necessary to achieve interoperability of the independently created program. It cannot therefore be used to create a program reproducing parts of a decompiled program having no relevance to the interoperability of the independently created program); Czarnota & Hart, supra note 44, at 83.
[100] Walter, supra note 38, at 221.
[101] Czarnota & Hart, supra note 44, at 78.

of each Member State in years to come and cases to adjudicate,[102] whereby the Directive's objective to unify Member States' legislation is threatened to be undermined by diverse national case law. This paper advises Member States having a look at the international platform of copyright law to ensure a coherent interpretation within Europe, and thereby avoiding distortion of the Common Market.

3.10.   Methods of Reverse Engineering
There are four methods of software reverse engineering to observe and analyze the computer program they are

(1) read about the program in the manuals, (2) observe the program in operation by loading and running it on a computer and viewing what the program does on the screen displays, (3) perform a static examination of the individual computer instructions contained within the program, or (4) perform a dynamic examination of instructions as the program is being run on a computer. These four factors are mentioned in the case of Sony Computer Entertainment, Inc. v. Connectix Corp.[103] In this case describing how section 117(a) (1) provides for copying of copyrighted software programs into RAM shall not be an infringement because a buyer must copy the program into the memory of a computer in order to make any use of the program.
The principal strategy for programming reverse engineering is the slightest powerful technique and requires assembling and perusing important documentation; e.g., a "Readme" record or the manuals concerning the PC program. Nonetheless, producers may not know about every one of the circumstances in which their product won't work legitimately until it has been delivered to purchasers. This issue may make programming documentation be obsolete or deficient.[104] Hence, when a reverse engineer intends to diagnose an unexpected failure of computer software, reading manuals will rarely provide the requisite information."

[102] Guillou, supra note 43, at 533.
[103] Sony Computer Entertainment, Inc. v. Connectix Corp., 203 E3d 596, 600 (9th Cir).
[104] Johnson-Laird, supranote 55, at 846

        The second technique includes replicating the copyrighted program into the computer's irregular get to memory or RAM, however does not require dismantling of the object code of a secured work.[105] This is refined in an unexpected way, contingent upon the sort of the product program. The thoughts and practical components of some product projects are promptly detectable by perception of the outer visual articulation of the object code's operation on the PC screen. During the execution of this technique, the PC program is straightforwardly copied each time the designer turns on the computer. In any case, the greater part of this duplicating might be transitional, which implies none of the ensured material might be replicated into, or show up in, the finished result.[106]
Third technique for reverse engineering is pertinent to decompilation of the object code once more into source code." For each situation, "engineers utilize a program known as a "disassembler" or decompiler to decipher the zeros of paired machine-intelligible object code into"' the words and numerical images of source code. In a static examination of the PC directions, an engineer decompiles the object code of all or some portion of the program without working the program itself.
In the fourth technique for reverse engineering, a dynamic examination of the PC directions, an engineer uses a decompiler to decompile parts of the program, one guideline at any given moment, while the program is running. Depending on the quantity of times this operation is played out, this strategy requires copying the

program.

3.11. Maintenance of Computer Programs

Software maintenance may be translation of computer programs written in an outdated programming language into a modern program language, or transcription of computer code from an amorphous form ("source code") into a structured language, to regain the source code once lost or to port application programs onto new hardware. Furthermore, decompilation may be of importance for computer security. Through acts of decompiling application

---

[105] Sony Computer Entertainment case203 E3d at 600

[106] Sega, 977 E2d at 1520

---

software, such as encryption software or authority checking systems, for security reasons, the users would be enabled to check whether their software is free of Trojan horses or "back doors".[107] The question is whether the Directive does leave room for acts of decompilation to be performed or as a means to track down interface information but likewise as a means for software maintenance.

Even though the final wording of Article 6 misses any reference to permissible decompiling computer programs for the purpose of software maintenance, it is the legislative documentation that shows evidence for intentionally not mentioning maintenance of computer software as legitimate purpose for decompiling computer software. The Commission devised the first draft reading "indispensable to achieve the creation, maintenance or functioning of an independently created interoperable program"[108] as far too extensive and consequently the idea behind Article 6 was reduced to the sole purpose of accomplishing interoperability.[109] Since Article 6 now permits decompilation to generally "achieve interoperability", users may argue that the broad meaning of Article 6 also covers acts donein order to maintain a computer program's interoperability with other programs.

However, unlike the proposal by the European Parliament,[110] the Commission has not confirmed maintenance per se (i.e., maintenance for purposes other than interoperability) as an independent reason justifying decompilation. Especially, updating or improving the target program is reserved to be done only by the copyright owner of the

---

[107] Walter, supra note 38 , at 212

[108] Proposed Directive Proposed Directive merely called for the same conditions as regards originality as apply to other (traditional) literary works. [hereinafter Proposed Directive].

[109] See Council Common Position, Council Common Position (EEC) No. 10652/1/90 of Dec. 14, 1990; also the Business Software Alliance (BSA) buttressed the standpoint of the Council reasoning that the British proposal could threat the development of client PCs. (has replaced the passage in question as follows: indispensable to obtain the information necessary to achieve the interoperability of an independently created computer program with other programs.")

[110] See Parliament Amendment, Cf. Proposed Directive, compared with Amended Proposal for a Council Directive on the Legal Protection of Computer Programs, 1991 O.J. (C 320) 22 et seq. [hereinafter Amended Proposal]. The failure to provide an express provision on reverse engineering was viewed as a ban on the practice. The express provision authorizing decompilation when necessary for interoperability first appeared in the amendments suggested by the European Parliament. See 1990 O.J. (C 231) 81 [hereinafter Parliament Amendments]. supra note 126, at 35; see also Amended Proposal, supra note 126, art. 5(a).

---

target program and not the licensee.[111] Alternatively, the exception of Article 5(1) of the EU Software Directive may be apply to maintenance of computer programs, reading that "[reproduction and translation of computer code] shall not require authorization by the right holder where they are necessary for the use of the computer program by the lawful acquirer in accordance with its intended purpose."[112] Which acts are in accordance with the target program's intended purpose? Likewise it is not clear, which, if any, acts of maintenance per se are covered by Article 5(1) provided that they are in accordance with the target program's intended purpose.[113] For identifying the intention of the software copyright licensor the licensee may search the license agreement or rely on the purpose of the computer program licensed as generally ascribed to in computer software industry.

After all, Article 5(1) obviously provides only an unsteady basis for per se maintenance of computer programs as permissible interoperability purpose. Still another legitimate question is whether error correction falls within the scope of software maintenance as computer users, arguably, assume that it is a computer program's inherent purpose to run without faults.[114]

3.11.1.   Error Correction

A software user may cite Article 5(1) of the EU Software Directive as expressly permitting reproducing, translating, adapting, or otherwise altering a computer program to analyze errors by eliminating them in the program without authorization of the copyright holder provided that the error correction is necessary for the use of the program.[115] Furthermore, likewise without authorization by the right holder, the client may for all time store

---

[111] Lehmann supra note 56 , at 18.

[112] EU Software Directive, art. 5(1).

[113] Drier Thomas. "The Council Directive of May 14 1991 on the Legal Protection of Computer Programs" 9 Intell. Prop. Rev. 319 (1991). at, 322, 324 (proposing that acts of maintenance shall be covered by Article 5(1) as long as they are in accordance with a program's intended purpose but without clarifying which acts and how the conditions could or should be met).

[114] Marly, supra note 34 (interpreting computer maintenance as, possibly, to include error correction within the original program writer'sintended purpose).

[115] EU Software Directive, art. 5(1), reads in full text:

---

and in this way run the adjusted program (i.e., the program then without errors).[116] In deciding in this way, Article 5(1) seems to render the reason for interoperability out of date when copying a computer program for mistake remedy. All the more, the blunder rectification arrangement is figured it out to be fairly unclear, particularly as it gives neither a meaning of a blunder adjustment nor the computer bug itself. Mistake rectification implies every one of the demonstrations suitable to find and settle a bug.[117]

A computer bug inside the importance of Article 5(1) may be characterized as a programming issue in a specialized sense.[118] Regardless of a general meaning of a computer bug, while one client may distinguish an operation of a program as a blunder, another client may characterize an indistinguishable operation from an expected feature.[119] Some type of decompilation will frequently be irreplaceable to dissect and in this manner amend errors. Like on account of programming support, the reason of errors amendment might be declared the length of the client can demonstrate that the program copy was "vital" to accomplish interoperability.[120] Acts of mistake adjustment must be activated by the presence of a solid and intense computer bug. On the off chance that, for instance, examine demonstrates that the issue why similarity can't be expert does not lie in the reverse engineer's own product, he would most likely have no alternative yet, to attempt and find through demonstrations

---

"In the absence of specific contractual provisions, the acts referred to in Article 4 (a) and (b) shall not require authorization by the right holder where they are necessary for the use of the computer program by the lawful acquirer in accordance with its intended purpose, including for error correction."

[116] Haberstumpf in Lehmann, supra note 56,(stating that the process of analyzing errors may need fixing the program onto a paper or data medium which is also covered by the exception of Article 5(1)).

[117] Czarnota & Hart, supra note 44, at 65.

[118] As most prominent example may be quoted the Y2K problem (the year 2000 problem also known as the millennium bug and the Y2K Bug) which was the result of a practice in computer program design that caused some date-related processing to operate incorrectly for dates and times on and after January 1, 2000 because they stored years with only two digits and thus the year 2000 would be represented by "00" and could also be interpreted by software as the year 1900.

[119] Kathleen Gilbert-Macmillan, Intellectual Property Law for Reverse Engineering Computer Programs in the European Community, 9Santa Clara Computer & High Tech L.J. 247, 261.

[120] Cf. id. (stating that the decompilation restrictions of Article 6 do not apply to error correction under Article 5(1) rather the limitations of the decompilation provisions ought to be diminished provided that decompilation was "necessary" for the intended use of the program,including error correction).

---

of decompilation what impossible to miss communication between his product and the other programming causes the crash.[121] Otherwise each client could participate in decompilation by going around the need of the copyright proprietor's agree with reference to the potential need of mistake correction.[122] The question for clients, hence, is whether one should better conform to the standard put forward in Article 6 or Article 5(1). The issue is that the relationship between Article 5(1) and Article 6 is not in any manner clear.

It takes after from the arrangement of Article 5(1) that mistake redress may not surpass what is required with a specific end goal to settle a computer bug. In computer reality, clients will confront the issue of knowing already precisely where the adjustment should be made. Along these lines, clients may well be constrained by nature to decompile bigger parts than where "Direct" decompilation happens under Article 6.[123] On the other hand, under the appearance of blunder adjustment, programming engineer might be welcome to "free-riding"

decompilation. Notwithstanding Article 5(1) unclearness, the Directive needs likewise an arrangement prohibiting any further utilization of the data acquired over the span of allowable mistake adjustment.

Given the ambiguous wording of Article 5(1) European advice may encourage clients to live with the decompilation confinements of Article 6 when participating in demonstrations of mistake adjustment. Notwithstanding, in any occasion, mistake revision for the unimportant reason for picking up a monetary preferred standpoint is not regarded sufficient.[124] As to programming suppliers, European advice may recommend for going into upkeep assertions or offering new arrivals of their computer programs all the time on the grounds that as it were at that point they would altogether stay away from the mistake adjustment issue in advance.[125] Article 5(1) is interpreted as default control as the content explicitly accommodates other legally binding courses of action.

---

[121] Johnson-Laird, supra note 55.
[122] Walter, supra note 38.
[123] Spoor, supra note 30.
[124] Walter, supra note 38, at 196-7.
[125] Jongen &Mejiboom, supra note 62.

This unclearness has now prompted distinctive results in the laws of the Member States. For instance, the Portuguese Copyright Statute by and large denies contracting out of the arrangement. With respect to my comprehension of the idea, such inflexible approach is in line with the finish of Article 5(1) which is to warrant a client's entitlement to utilize, including copy, a program as per its planned reason, including mistake rectification. Accordingly, an authoritative arrangement restricting a legitimate client from blunder amendment under all conditions is profoundly flawed to comport with the Directive's expected objective. Another approach has been picked by British case law that has cut out a suggested ideal to amend errors.[126] After all, it is for sure exceptional that the arrangement has not prompted more level headed discussion in the European Parliament.

3.11.2. Research

The EU Software Directive does not take an express remain on whether decompiling a computer program with the end goal of research is past the thought of interoperability or not. With the expect to reveal insight into the correct extension and reasonability of the interoperability necessity, the law in the United Kingdom might give direction given the Directive's need with respect to the research situation in the product decompilation setting. Before usage of the EU Software Directive, the general principles on the U.K. convention of reasonable managing, which is like the U.S. reasonable utilize idea, connected additionally to the reason for research.[127] As the EU Software Directive and additionally its administrative history is quiet with respect to research, the Directive called for changes in the copyright law having been in compel in the United Kingdom at that time.[128]

---

[126] British Leyland Motor Corp. & Ors. v. Armstrong Patents Company Ltd. & Ors. (1986) 2 W.L.R. 400 (Feb. 27, 1986) (U.K.),
[127]USC section 29(1) of the Copyright, Designs and Patents Act 1988 (U.K.) [hereinafter 1988 Copyright Act] reads as follows:
"Fair dealing with a literary, dramatic, musical or artistic work for the purpose of research or private study does not infringe any copyright in the work or, in the case of a published edition, in the typographical arrangement."
[128] The main exception to a software owner's right to copy and adapt a computer program under
the 1988 Copyright Act is that, subject to any contractual right or obligation, the "fair dealing" with a computer program for the purpose of research, private study, criticism or review or reporting current events is not infringement of copyright. The term "fair dealing" is not defined in the 1988 Copyright Act, although a likely test for fair dealing is whether it would be reasonable to expect that a person making

Appropriately, the reasonable managing tenets were supplanted by the exemption of the Directive permitting decompilation exclusively to the degree important to accomplish interoperability of computer programs.[129] Outside the extent of programming decompilation, be that as it may, the reasonable managing resistance may well apply to cases not including computer programs. In this way, in barring programming from the extent of the conventional reasonable managing arrangements it creates the impression that the United Kingdom has translated the terms of the Directive as accepting the utilization of data gotten through decompilation for research.[130] Seemingly, the structure of U.K. copyright law in this manner has turned conflicting and so judges may well slope to disregard the restricted extension of interoperability in the comprehension of the European officials. By the

day's end the Directive's dubiousness as to the extent of interoperability as the essential condition for allowing decompilation of computer programs dangers to back off the harmonization of all Member States' enactments in the field of programming decompilation.

3.12.   The Essential Criterion

Decompiling the computer program must be basic to acquire the data important to accomplish the interoperability of an autonomously made computer program.[131] The essentialness basis of Article 6 of the EU Programming Directive regarding decompilation is deciphered in a limited sense as to be of ultimate proportion for programming designers, who have no other path as to depend on the very interface data essential for the production of interoperable programs. At the end of the day, Article 6 goes about as a security valve;[132] i.e., just if the crucial data is not accessible in some other non-encroaching way, programming engineers should be qualified for copy

---

a copy of a part or the whole of a work, should purchase the work instead. See Jongen & Meijboom, supra note 62, for a presentation ofthe British fair dealing doctrine see also Marly, supra note 34, at 293.

[129]Copyright (Computer Programs) Regulations 1992 (S.I. 1992, No. 3233), section 50A, 50B, 50C (U.K), which are operative fromJanuary 1, 1993.

[130] Implementing EU directives into U.K. copyright law see Guillou supra note 43.

[131] EU Software Directive, art. 6(1).

[132]Czarnota &Hart supra note 44.

the code and change it without approval of the right holder In other words, a software programmer can't settle on the procedure of decompilation in inclination to other, non-infringing measures available.[133] This view is moreover substantiated by the Explanatory Memorandum to the Amended Proposal where it is expressed that if all else fails, a man having a privilege to utilize a copy of a program may submit demonstrations of generation and interpretation of the machine readable type of the code in which the copy has been provided without the approval of the right holder, subject to certain impediments.

There is by all accounts no defense for an arrangement which licenses creators' rights to be infringed when conditions don't request it. The changed proposition in this way constrains the utilization of the exemption to conditions where non-infringing means are definitely not adequate.[134] Article 6 indicates that there are distinctive techniques for how interoperability might be fulfilled some of them, obviously, are infringing while some of them are not. What does "indispensable" mean? Be that as it may, the EU Software Directive is quiet as to which non‑infringing specialized other options to decompilation are accessible and which (down to earth) part each of themplays in day by day life of the product industry.

Neither does the Directive manage the sequence of occasions in the procedure of programming creation, however depends instead on the capacity of the litigant to legitimize his activities at any given moment.[135] The prerequisite for "interoperability of the independently made computer program" given in Article 6(2)(a) is to guarantee that any decompilation of an objective program does not happen before the independently made program exits. It doesn't matter whether decompilation of the objective program happens before the final coding of the independently made program into machine-meaningful shape, or even at a few prior phase of the improvement

---

[133] Id. (distinguishing the ultima ratio approach of Article 6 from the fair dealing/fair use exceptions insofar as the latter provide that circumstances will justify the performance of otherwise restricted acts, regardless of whether other means exist to accomplish the sameobjective).

[134]Commission Preparatory Memorandum, Commission Preparatory Memorandum of a Proposal for a Council Directive on the legal protection of computer programs, para. 2.4., 1989 O.J. (C 91) 4 [hereinafter Commission Preparatory Memorandum].

[135]Czarnota & Hart supra note 44.

cycle. Be that as it may, in any occasion the new program must as of now exist, at any rate, in the type of preliminary plan material.[136]

Therefore, if the maker of the new computer program has no preliminary plan work finished all alone program before he begins decompiling the objective program, it might be troublesome for him to legitimize whydecompilation was essential at that given stage in the advancement procedure, or to demonstrate that the data was most certainly not promptly accessible by other means, since he won't have himself characterized the interoperability which his program will look to accomplish with those of other programming programmers. In light of effectiveness contemplations, nonetheless, the second programming engineer does not need to finish the

coding into machine-clear type of the considerable number of interfaces of his autonomously made program before endeavoring to accomplish interoperability.[137]

3.12.1. Analyzing Preparatory Design Material

This is one option for discovering courses to interoperability, reverse engineering might be achieved by checking on particulars, manuals and other specialized material to the degree they are (openly) available.[138] The source code itself once in a while is uncovered, just documentation containing data thereto. Such documentation might be included with the computer program or otherwise accessible from the product's maker. In view of that documentation then autonomously computer programs might be developed.[139] Here, the way that reverse engineering is, by all accounts, an exorbitant and tedious practice comes into play.[140] Before a reverse engineer resorts to more troublesome and more costly practices of reverse engineering, for example, decompilation, he

---

[136]Czarnota & Hart supra note 44, (requiring a "paper trail" to demonstrate the existence of the program before decompilation wasembarked upon).

[137] Czarnota & Hart supra note 44, at 79; Walter, supra note ,52.

[138]Jongen & Meijboom, supra note 62.

[139] Bayha, supra note 33.

[140]Czarnota & Hart, supra note 44, at 76

---

presumably has looked for the data required to build up a good item from the documentation discharged by the original programming developer.[141] In spite of the benefits of breaking down preliminary outline material, truly documentation normally turns out to be inadequate, off base, and outdated when contrasted with the real programming itself.[142] By its extremely nature and the way of its creation, the documentation is an announcement of purpose, of how the real compute program ought to be, instead of how it is.[143]

Therefore, computer bugs customarily are not said, considerably less, depicted in manuals. The error of documentation has two results. In the first place, keeping in mind the end goal to accomplish full interoperability moreover unexplained operations must be recreated. Second, in the event that one is propelled to decompile a program due to a startling disappointment in its operation, and the aim is to comprehend why the program does not perform, instead of to achieve full interoperability, then the product engineer will be encouraged to benefit himself of other proficient practices.[144] Expecting that the investigating of preliminary outline material does in truth constitute a adequate hotspot for the product designer's motivation there is as yet the topic of the lawful status of examining preliminary outline material under copyright law. Remarkably, in Article 6 the expression "code" is utilized, while elsewhere in the Order the expression "computer program" shows up. Yet in computer science both terms are equivalent words, this is not valid with regards to the EU Software Directive. With the end goal of the EU Software Directive[145] the expression "computer program", in opposition to the expression "code",

---

[141] Vinje, supra note 45. n.22 (IBM published the entire source code of its first PC-BIOS and manuals concerning further information of its PC-BIOS interfaces).

[142] For example, a look at the "Readme" file, included in most software programs, will disclose all of the errors in and changes made tothe documentation of the program after the manual was made., supra note 33 , at 154.

[143] Johnson-Laird, supra note 55, at 846, 860 (characterizing the documentation as a "word picture of the [actual] program, not the program itself").

[144] See Vinje, supra note 45, at 253.

[145] Article 1(1) of the EU Software Directive, reads in full text: "1. In accordance with the provisions of this Directive, Member States shall protect computer programs, by copyright, as literary works within the meaning of the Berne Convention for the Protection of Literary and Artistic Works. For the purposes of this Directive the term 'computer programs' shall include preparatory… design material."

---

incorporates preliminary plan material.[146] Therefore, the special case administer of Article 6, by method for alluding to "code" however not to "computer program", does exclude the duplication and remaking of preliminary plan material.[147]

The same is valid for other things regularly considered to fall inside the importance of computer program, for example, client manuals, computer yield furthermore, computer databases. Those in like manner stay to be ensured or not as per every Member State's local copyright law.[148] Notwithstanding the befuddling phrasing utilized as a part of the Directive, or maybe in view of absence of clarity, none of the EU Member States has accommodated a legitimate meaning of computer program in their national copyright laws. All things considered, the different

wording as picked by the drafters of the EU Software Directive demonstrates that the plan sought after in the Mandate was not to limit the perusing of revealed documentation in the same path as the procedure of decompiling computer software.,[149] in this manner with respect to the breaking down of preliminary plan material in more extensive terms as non-encroaching means to access of interface data.

3.12.2.   The Burden Of Proving Indispensability

The indispensability requirement of Article 6 requires proof that means others than decompilation to achieve the same objective were not available or technically not sufficient for the software developer's purposes. In practice, available alternatives to decompilation are likely to precede acts of decompilation because decompiling a computer program, by its nature, is a lengthy, costly and inefficient procedure.[150] Notwithstanding the negative

---

[146] Preparatory design material must refer "to the development of a computer program provided that the nature of the preparatory workis such that a computer program can result from it at a later stage."

[147]Czarnota & Hart supra note 44, at 77; see also WALTER, supra note 38 at 219.

[148] Bainbride supra note 55, 121 (making a copy of a flowchart used in the design of a computer program will infringe the copyright in the computer program under European copyright law, while under U.K. law the flowchart would be protected independently as an artisticwork).

[149] Vinje, supra note 45, at 252 n.19, 253.

[150]Commission preparatory memorandum, supra note 141, para. 3.14, at 8.

---

connotation of decompiling a computer program, Article 6 lacks any provision as to who shall bear the burden of proof and what are the rules when decompilation is not indispensable to access the unprotected information desired. In the absence of an explicit provision at European level it will remain with the Member States to regulate who shall bear the burden of proving "indispensability".[151]

Assuming that Article 6 intends to put the burden of proof upon the defendant software engineer[152] (i.e. the one who lawfully decompiles an original computer program) the defendant must show that previously other means have been reviewed with the result that they proved to be inadequate as to achieve the same end in a non-infringing way.[153]Therefore, in any litigation process it will be necessary for the defendant programmer to demonstrate not only the extent to which his acts were in accordance with Article 6,[154] but also the chain of events which led to his recourse to Article 6.[155] In contrast to the word "necessary" used in the same sentence, "indispensable" suggests an absolute (objective) standard which will not be met if the decompilation was not necessary in the particular circumstances. For example, if the required interface information can be clearly identified by means of Article 5(3), or is documented in manuals or technical literature, then the defendant software developer must justify the decompilation as going beyond those identifying interface areas.[156] Who, however, decides whether

---

[151] Vinje, supra note 45, at 257 n.53.

[152] Joseph Haaf, the EC Directive on the Legal Protection of Computer Programs: Decompilation and Security for Confidential Programming Techniques, 30 COLUM. J. TRANSNAT'L L. 401, 412 (1994). (indicating that the statute should place the burden of proof for showing that the use of information obtained through decompilation is exempted upon the party charged with the improper use).

[153]Czarnota & Hart, supra note 44, at 84 (suggesting to maintain records, similar to those kept as a consequence of "clean room" activities, if decompilation for interoperability purposes is to be used).

[154]Id. at 84 (recommending institute a controlled set of procedures in the decompilation process as an important precaution to show compliance with Article 6).

[155] Id. at 77 (stating that Article 6 implies tsshe presumption that the software developer who decompiles the original program has reviewed other means to achieve the same end and has found them to be inadequate).

[156]Jongen & Meijboom, supra note 62.

---

the interface information readily available in documentation provided by the original software supplier is sufficient, accurate and up-to-date as for the purpose of the legitimate software user?[157]

Even if a software developer gets engaged in an Article 5(3) technique, he may encounter even another evidentiary problem, to wit, how to prove that the analytic black-box test did not amount in decompiling the target program.[158] It is certainly true that it may be difficult in practice to demonstrate that acts of decompilation have taken place and if so that there was no other way available given the facts of a particular case. Judges will have

to turn to and rely on expert witnesses in questions of evidence. Given the highly technical circumstances decompilation cases may entail there is an undeniable probability that courtroom turned into a combat zone for master witnesses. From this point of view, the adequacy of such an intricate arrangement on decompilation as the European lawmakers picked to receive in Article 6 of the EU Software Directive is not free from doubts.[159]

Here researcher has discussed the fair use of computer program and the reverse engineering of computer program is considered as a fair use. But the copyright owners are prohibits the reverse engineering by enforcing the software license. How the software license prohibits the reverse engineering which is discussed in next chapter.

---

[157] Guillou, supra note 43, at 533.

[158] Morrison, Linda G. "The EC Directive on the Legal Protection of Computer Programs: Does It Leave Room for Reverse EngineeringBeyond the Need for Interoperability?" 25 Vand. J. Transnat'l L. 293 (1992).

[159] Dreier, supra note 120, at 325.

IV.   SOFTWARE LICENSE AGREEMENT UNDER COPYRIGHT LAW

4.1.   SOFTWARE LICENSE AGREEMENT

In this chapter Proprietary software is not sold but rather is only licensed.[1] Under this strategy, the software industry aspires to design its own rights and duties, even beyond the rights granted by copyright law.[2] A software license agreement is the legal contract between the licensor and the purchaser of a piece of software which establishes the purchaser's rights. A software license agreement details how and when the software can be used, and provides any restrictions that are imposed on the software. A software license agreement also defines and protects the rights of the parties involved in a clear and concise manner. Most of software license agreements are in digital form and are not presented to the purchaser until the purchase is complete. Under United States copyright law all software is copyright ensured, in source code as additionally protest code form. The main special case is software in people in general area.

A common place software license gives the licensee, regularly an end-user, consent to utilize at least one copies of software in ways where such an utilization would somehow or another conceivably constitute copyright encroachment of the software proprietor's elite rights under copyright law.

---

[1] Microsoft Corp. v. Harmony Computer & Elecs., Inc., 846 F. Supp. 208, 210 (E.D.N.Y . 1994) Microsoft successfully argued hat it never sells but rather only licenses its product. See also adobe Sys., Inc., v. Stargate Software Inc., 216 F. Supp. 2d 1051, 1052 (N.D. Cal. 2002) (Adobe claims all Adobe software products are subject to a Shrink-wrap End User License Agreement (EULA) that prohibits copying or commercial re-distribution).

[2] Christian H. Nandan software license in the 21st century: Are software licenses really sales and how will the software industry respond?32 AIPLA Q.J.555, 559-60 (2004).

4.2.   HISTORY OF SOFTWARE CONTRACT

In the early days of computers, there was no difference between hardware and software. Customers purchased a computer and that purchase includes the cost of the hardware (that is the microprocessors and other accessories and peripherals) as well as the in-built software. It was only after IBM first discovered the commercial potential to be realized in separating their software from their hardware, that customers could, as they can today, purchasesoftware separately from their computers.

Before 1968, IBM and other computer vendors offered software as part of the computer system price. There was no concept of separate software, and consequently, software was viewed as being the free and unwarranted components of the machine purchased. At around that time, IBM was being investigated by the department of Justice in the united states of America and many within the management were concerned that the company could face an antitrust lawsuit on the ground that the "building of IBM's software within the hardware price was anti-competitive. As a result, the company decided in early 1968, that it would price its programs separately from thehardware. In order to do so, the company reduced their hardware price to adjust for the cost of the software.

The first software program sold in this manner was the new version of COBOL that, based on market surveys, was predicted to perform well; however, this foray into separate pricing was largely unsuccessful. Not so much due to product deficiencies as due to of the reluctance of customers to pay for what was once a free product. However, the policy stuck and today software is not only sold separately, but is rarely considered part of the hardware.

Given its roots, there is a great temptation to consider the sale of software in the same light as one would consider the sale of any other goods. This is incorrect, as almost no software is sold in that manner. Software is intellectual

property, incapable of being viewed in a tangible manner. As a result, software contracts are considerably different from hardware, or that matter, any other type of contract. Given the various aspects that go into the creation, development, marketing and sale of good software, there are host of contractual issues that go into the business of software development.

4.3.   TYPES OF SOFTWARE LICENSING AGREEMENT
Software licensing agreement has three types they are shrink wrap agreement, click wrap agreement, and browsewrap agreement.

4.3.1.   Shrink Wrap Agreement
Shrink wrap license agreement that is usually contained in a box of software, states that by opening the package, you agree to the terms of the license agreement.[3] Shrink Wrap Agreements derived their name from the "Shrink –Wrap" packaging. Shrinkwrap licenses can be categorized into different subgroups: a) In-box Licenses, where the license is enclosed with the product in a sealed envelope; b) Box-top Licenses, which can be read before opening the box; and c) Referral Licenses, where there is a sticker indicating that the CD-ROM should not be opened prior to reading the license agreement. As soon as the buyer tears the cover or the wrap, it is deemed that the buyer has agreed to the terms and conditions to use the software and therefore, a contract is said to have been formed.

4.3.2.   The Enforceability Of Shrinkwrap
The enforceability of the shrink wrap license agreement has been frequently debated before courts in USA and elsewhere. As can be imagined, the principal concern related to the enforceability of such agreements. Given the manner in which this transaction takes place, even though the customer is deemed, under the terms of the license agreement to have actually studied the contract and considered its terms before tearing open the trouble to examine

---

[3] Nandan, supra note 30, at 362; see Mark a. Lemley, sshrinkwraps in cyberspace, Jurimetrics J. 311, 312 (1995).

in detail the terms of the software license agreement. The sale occurs, the purchaser pays for the software, and that is the end of the transaction.

To add to this, given the limited space within which all the terms of the license agreement have to be printed, the license agreement, as it appears under the shrink wrapping, is usually in small often unreadable font and not in the same detail that is included inside the box. In most cases, the purchaser does not become aware of the actual detailed terms of the license until after the sale is consumed, even though most software purchasers are, by now, aware of the existence of a shrink wrap license.

Since the purchase fails to actually sign the shrink wrap license agreement, or otherwise expressly agree to the terms of the shrink wrap license, the fact that he has accepted the terms of the license agreement is inferred from the fact that he opened the package or used the software, even though he could have done this without actually reading the terms of the license agreement. The question that we have to ask is whether, in fact, this form of license is enforceable. This is a question that has been the subject of considerable judicial debate in USA and it might be worthwhile to examine the case law in this regard.

The first case that discussed the concept of shrink wrap licenses was the case of Step-Saver Data systems, Inc v. Wyse Technology.[4] Data system, Inc was a company that configured and sold computer systems various customers. The systems software that was used on these configured systems were purchased from a company known as the software link, inc and the computer terminals were bought from wyse technology. Due to certain grave problems in the operating software, the customers of step-saver data Inc brought suit against the latter. Since the suit against step-saver was based on the failure of the software to perform as promised, step-saver immediately filed a suit against the software link and wyse technology, alleging a breach of warranty. Step-saver lost this case before the lower court. While the court of Appeal for the Third Circuit affirmed the lower court decision regarding

---

[4] Step-Saver Data systems, Inc v. Wyse Technology 939 F 2d 91 (3rd Cir 1991).

the breach of contract provisions, it reversed (and this is interesting from the point of view of this discussion) the decision of the lower court with regard to the legal effect of the shrink wrap license.

The court held that since step-save purchased the software program over the telephone, the contract for purchase of software was completed when the seller completed his obligation under the contract, by sending the software to the purchase. Whether terms were discussed over the telephone were the agreed to and since the

seller did not mention that were incorporated in the contract, the court held that the purchaser additional terms only after payment and delivery of the software were completed. Thus, at the time the contract for purchase of software was completed, the purchaser had not expressly assented to the license agreement, since its terms were unknown to him. Consequently, the contract that bound the purchaser to the terms of the license agreement was not accepted by the purchaser and therefore not enforceable by the seller. The court also held that it could not infer that the buyer had assented to the terms of the license from his continuing with the agreement, since the buyer never expressly assented the shrink wrap license was not part of the contract for the sale of software and the terms of the license agreement could not be enforced.

The next important case that alluded to the enforceability of shrink wrap licenses is Arizona Retail Systems, Inc

v. Software Link, Inc[5]. In this case, software link sent a demonstration copy and 'real' copy of the software program to a prospective customer, Arizona Retail Systems, inc. the complete terms of the shrink wrap license agreement were printed on the outside of the envelope containing the 'real' copy of the disk. The terms of the license agreement included some of the typical clauses contained in shrink wrap license including clauses stating that:

∉ The customer has not purchased the software itself, but merely has obtained a personal, non-transferable license to use the program;

---

[5] Arizona Retail Systems, Inc v. Software Link, Inc. 831 F Supp 759 (D 1993).

∉ The seller disclaims all warranties; except for a warranty covering physical defects in the medium on which the software is supplied;

∉ The purchaser's remedies were limited to repair and replacement of defective disks, and that the seller would bear no liability for damages caused by the use of the program;

∉ The license was the final and complete expression of the parties' agreements with regard to the software;

∉ The program or license could not be assigned without the express prior consent of the seller"

∉ The purchaser was deemed to have accepted the license upon opening the package containing real copy of the software.

The user decided to purchase the 'real copy' of the software and called the seller to complete the transaction. Thereafter, the purchaser ordered, from time to time and over the telephone, additional 'real copies' of the software. A dispute arose with regard to the terms of the shrink wrap contract and the issue before the court was whether the shrink wrap license on the cover of the first copy of the software purchased was incorporated into the entire contract.

In passing its judgment, the court stated that the terms of the shrink wrap license were limited in applicability to the contract alone because it was the only contract where the purchaser actually read all the terms of the contract before calling the seller and completing the initial purchase. In respect of the first transaction, therefore, the silence on the part of the purchaser was held to construe the assent on the part of the purchaser as to the inclusion of the additional license terms in the main body of the contract. The license terms could not, however, be construed to have been included in subsequently contracts, as the buyer did not know the terms of the license prior to the contract. The court held that in order for the purchaser to be bound to the terms of the license in respect of subsequent copies of the software, the purchaser must have given his assent to the terms of the each subsequent contract. If not, the purchaser is not bound by these terms in respect of any subsequent license.

Thus while the first case expresses serious of reservations with regard to whether shrink wrap license agreements constitute valid and binding contractual obligations, the second case seems to acknowledge the binding nature of contract created in such manner but specifics that the contract must be in respect of all copies of the software supplied, in order for it to be enforceable with regard to subsequent copies of the software.

The question of enforceability of shrink wrap licenses was raised once again in the landmark case of ProCD v. Zeidenberg[6] here the court held "that the very certainty that buyer in the wake of perusing the terms of the license included outside the wrap license opens the cover combined with the way that he acknowledges the entire terms of the license that shows up on the screen by a key stroke, constitutes an acknowledgment of the terms by direct.

4.3.3 Click Wrap Agreement

Click Wrap Agreements are a natural development in today's e-commerce world from "Shrink Wrap Agreements". Clickwrap license may be presented in the following ways: a) prior to download, a scroll-box appears and the user is asked to read a license and click "I Agree" b) The license is shown in a similar way, but during the installation of the program, rather than before download; and c) The so called "browsewrap" licenses a variation of clickwrap licenses which are ordinarily found in online transactions where the user is informed of the existence of a license but is not required to read the license in order to proceed.[7] In a Click Wrap Agreement, the party after going through the terms and conditions provided in the website or program has to typically indicate his assent by clicking "I Agree/I Accept" icon or decline the same by clicking the icon "I disagree". These types of contracts are extensively used on Internet for granting permission to access the site or downloading the software or selling some product. It is described as a message presented to the user on his or her computer screen that requires the user to assent to the terms of the agreement through the act of clicking an icon[8]

---

[6] ProCD v. Zeidenberg. 86 F 3d 1447.

[7] Johnson, supra note 196, at 98.

[8] Specht v. Netscape Communications corp., 150 F.Supp.2d 585, 45 UCC Rep.Serv.2d 1 (S.D.N.Y 2001).

Software Developers generally rely on the use of contracts in the form of click wrap license agreements as a means to protect software from unauthorized use, modification and copying. By granting a license to the purchaser to use the software rather than selling the program outright, the Software Developer is able to retain and have control over his product. Most of click wrap license agreements are non-exclusive licenses which mean that the licensor reserves the right to license the same software to other licensees.

4.3.4. The Enforceability Of Clickwrap

Clickwrap agreements have usually been held to be valid and enforceable whenever the courts have had the occasion to consider them.[9] The courts have generally found that when considering the terms of a contract, absent fraud or mistake, if a party signs a contract and has the opportunity to read the terms of this contract, whether he or she actually does so or not, they are bound by it.[10] This holds true as well when applied to clickwrap agreements: "Failure to read an enforceable online agreement, as with any binding contract, will not excuse compliance with its terms. A customer on notice of contract terms available on the internet is bound by those terms."[11]

When presented with the issue of the enforceability of clickwrap agreements the courts still apply the traditional principles of contract law.[12] Since clickwrap agreements are standard form contracts when considering the enforceability of clickwrap agreements the courts have relied on the objective theory of contracts when deciding whether or not to enforce the terms of the agreement.[13] Therefore, when considering the enforceability of standard

---

[9] Id. at 594 (citing In re Real Networks, Inc., Privacy Litigation, 2000 WL 631341 (N.D.Ill. 2000); Hotmail Corp. v. Van$ Money Pie,Inc., 1998 WL 388389 (N.D.Cal. 1998))

[10] Nickens v. Labor Agency of Metro. Washington, 600 A.2d 813, 817 n. 2 (D.C. 1991).

[11] Burcham v. Expedia, Inc., 2009 WL 586513, 2 (E.D.Mo. 2009).

[12] Adsit Co., Inc. v. Gustin, 874 N.E.2d 1018, 1023 (Ind. Ct. App. 2007) (citing Feldman v. Google, Inc., 513 F.Supp.2d 229, 236 (E.D.Pa 2007)).

[13] Juliet M. Moringiello, Signals, Assent and Internet Contracting, 57 Rutgers L. Rev.. 1307, 1314 (2005).

form contracts, the courts have substituted notice of terms for the meeting of the minds in the classical subjective theory of contracts.[14]

The combination of reasonable notice of the contractual nature of the offered terms and whether or not the accepting party has had an opportunity to review the terms of the agreement serves as the basis for the "reasonable communicativeness" test used by the courts when considering standard form contracts.[15] As such, when determining if clickwrap agreements should be enforceable the courts have generally focused on the fact of whether or not the existence of the terms of a contract has been given adequate notice to the purchaser.[16]

Click wrap agreements usually include provision as a 'Anti-reverse Engineering Clause', prohibiting the user from reassembling the product from the already available version, a provision protecting the copyright over the software/ product design, a usual limitation or disclaimer of warranties and liabilities, a clause limiting the liability of the vendor, a purchaser's right to decline the terms of the agreement by returning the software program or the product, as the case may be. Thus, the process of click wrap agreements are which do not involve the concept of mutual assents and bargains as provided in the contract theory. Actually they are "take it or leave it" agreements in which the user is not made aware of the terms until late in the transaction (just before the use of the product) which is different from traditional written contract.

The potential problem with click wrap agreements arises from the basic principles of contract law. In the case of Click Wrap Agreements, the purchaser purchases the product and is then asked to agree to terms and conditions at a later stage, when there is no opportunity to negotiate such terms. And so the enforceability of click wrap agreements has been questioned and examined in many countries and jurisdictions.

There are a number of cases that can be used as guidance and besides is the Uniform Information Computer Information Transaction Act (UCITA) which harmonizes the approach to click-wrap agreements to a great extent.

---

[14] Ibid.,

[15] Ibid.,

[16] Id. at 1319.

In the arena of click-wrap agreements, the most famous US case was that of Hotmail Corporation v. Money Pie Inc.,[17] here the court held that, where the clicking of an 'I agree' button at the bottom of a terms and conditions page was considered sufficient. But some forms of click-wrap agreements have not been enforced.

In European Union (EU), until recently the enforceability of click wrap agreements has been very unclear, while in Australia click-wrap are enforceable in principle. A recent judgment of the Court of Justice of the European Union to address 'click-wrap' contracts was the case of Jaouad El Majdoub v Cars on the Web[18]. This case involved a request for a preliminary ruling concerning the interpretation of Article 23(2) of Council Regulation (EC) No 44/2001 of 22 December, 2000 on jurisdiction and the recognition and enforcement of judgments in civil and commercial matters.

The question asked by the referring German court was whether 'click-wrapping' fulfilled the requirements relating to a communication by electronic means within the meaning of Article 23(2) of the Brussels I Regulation.

4.3.5.   Ruling

The ruling sought was in relation to the validity of a jurisdiction clause contained in a contract for the sale of goods which was entered into by the buyer clicking a link on the seller's website.

---

[17] Hotmail Corporation v. Van $ Money Pie Inc., (No. C-98 JW PVT ENE, C 98- 20064 JW, 1998 WL 388389 (N.D. Cal., 1998) Plaintiff Hotmail, a provider of free e-mail addresses and owner of the mark HOTMAIL and the domain name "hotmail.com," sued defendants for false designation of origin, trademark infringement, and trademark dilution arising from defendants' use of plaintiff's "hotmail.com" domain name in falsified return e-mail addresses. Specifically, the defendants sent spam e-mail messages advertising pornographic material, each containing return addresses bearing Hotmail account return addresses, when in fact the messages did not originate from Hotmail or a Hotmail account. Hotmail's service-provider agreement specifically prohibited the sending of spam mail. Finding Hotmail likely to succeed on the merits of its claims, the court granted its motion for preliminary injunction and prohibited defendants from engaging in spamming activities and from using plaintiff's HOTMAIL mark and "hotmail.com" domain name in any manner.

[18] Jaouad El Majdoub v. Cars on the Web. Deutschland Gmbh, (C332/14) (21 May, 2015).

The buyer (a car dealer based in Cologne, Germany) contracted to acquire an electric car from the seller (whose registered office was in Amberg, Germany). Before the buyer received delivery of the car, the seller cancelled the contract, claiming that it had noticed that the car had been damaged prior to shipment to the buyer.

The buyer disputed this reason and alleged that the true reason for the cancellation of the sale was that the buyer had purchased the car for a very good price and that the seller had since realized that and no longer wished to sell. The buyer then issued proceedings before a German court.

The seller asserted that the German courts had no jurisdiction to hear the dispute as the contract stated that the courts of Belgium were to have jurisdiction in the event of a dispute. The buyer challenged the validity of the jurisdictional clause, maintaining that it was not "in writing", as required under Article 23(1) (a) of the Brussels I Regulation.

Article 23(1)(a) of the Brussels I Regulation requires that a contractual agreement conferring jurisdiction on the courts of a member state (which jurisdiction shall be exclusive unless the parties agree otherwise but which jurisdiction is subject to certain exceptions) must be in writing or be evidenced in writing.

4.3.6.   Clicking The Box:

Article 23(2) provides that any communication by electronic means which provides a durable record of the agreement shall be equivalent to "writing."

The buyer submitted that the webpage containing the general terms and conditions of sale of the seller did not open automatically upon registration and upon every individual sale. Instead, the buyer said, a box with the indication 'click here to open the conditions of delivery and payment in a new window' must be clicked on ('click-wrapping'). The buyer also contended that the provisions of Article 23(2) are met only if the window containing those general terms and conditions opens automatically.

4.4.   THE JUDGMENT:

The answer given by the Court of Justice of the European Union was that, in the instant case, the 'click-wrapping' tool made it 'possible' to save and print the relevant general terms and conditions before concluding the contract and therefore, in this case, the method of accepting the general terms and conditions of a contract for sale by 'click-wrapping', concluded by electronic means, which contains an agreement conferring jurisdiction, constituted a communication by electronic means which provided a durable record of the agreement.

While the Brussels I Regulation has been recast, the jurisdiction requirements remain the same in the recast regulation and the decision (which reflected the reasoning of the referring court) is still relevant.

4.5.   EVIDENCED IN WRITING – AN IRISH CASE:

Article 23 and the concept of a contract being evidenced in writing were considered by Judge Peart in the case of Muireann Gaffney trading as Art of Fitness v. Life Fitness (UK) Limited,.[19] In that case, there was a dispute between the parties over the alleged unlawful termination of a distribution agreement (by reason of insufficient notice) in a situation where a renewal contract had only been executed by the plaintiff but both parties had continued to perform under its terms. The learned judge thus found that the High Court did not have jurisdiction given the jurisdiction clause contained in the original and the renewal agreements.

The global legal system continues to evolve to deal with the circumstances presented to it and this is particularly true in the case of the World Wide Web and the concepts of online trading and dissemination of information thatit ushered in. People and companies engaged in online activities must continually bear this in mind.

4.6.   ISSUE INVOLVED IN ENFORCING CLICKWRAP AGREEMENTS

---

[19] Art of Fitness v. Life Fitness (UK) Ltd (2015) IEHC 123 (26 February 2015).

In click wrap agreements, the meeting amongst the parties is virtual i.e. they do not meet physically. The contract could be for the sale of any kind of product, physical or otherwise. Following are some of the issues that arise due to click wrap contracting:-

4.7.   IDENTITY OF PARTIES

In click wrap agreements, the parties are not able to meet and negotiate the terms of the contract. Due to this and the contract being in standard form, the identity of the parties is unknown unlike in traditional meetings where individual or the company, as the case may be, negotiate the terms face to face. Hence, such transactions do not give the same sense of security. Online, the business transaction is entered into with what is generally in the

nature of a faceless icon. Moreover, a due diligence exercises undertaken to verify the identity of the opposite party and to ascertain whether the latter is competent and capable of performing the contract becomes cumbersome. Also relevant is the fact that in case due diligence is conducted; the whole point of entering into this type of agreement due to its time saving ability will be defeated. The element of trust in online transactions (click wrap agreements) is a crucial one. Parties enter into the contract in good faith only. In normal goods for money transactions, the aggrieved knows the other party who is to be sued in case of default. However, in such transactions since the identity of the defaulter, if it is the person agreeing to the terms of the contract, is unknown, it is difficult to track and sue the person. Also, there exists the possibility of a fraudulent website exhibiting wares for sale, which accepts funds for delivery of goods but disappears later. The vendor's identity is not known except through an impermanent and usually untraceable electronic link. In the light of these problems, it becomes imperative for the parties to a contract to be capable of being identified and their identity be guaranteed by a reliable entity.

4.8.   JURISDICTION
Due to the nature of the Internet it becomes hard to discern the point and place of offer, acceptance and performance of the contract. Since legal issues of jurisdiction are dependent on such factors, it is imperative to know about them. Moreover, the laws of contract governing the transaction may have certain variations in cases where an international element is present in the transaction, like the procedural formalities etc. may be different in separate jurisdictions. Therefore, the seat of the dispute is of great consequence to the outcome of the case.

4.9.   LEGAL RECOGNITION OF TRANSACTION
Further, even if the identity of the parties involved in the transactions is ascertainable, will the legal enforcement machinery of the State recognize such a transaction carried out on the internet? The evidentiary value of such transactions is not clear as of now. Thus, if an agreement is concluded in the form of a click wrap license, the admissibility of such document is disputable. Such an issue raises questions such as the reliability of such evidencevis-a-vis the amenability of such evidence to tampering.

4.10.   NOTICE
Notice is one of the important points considered by courts in deciding the enforceability of such contracts in the USA. Courts have held that click wrap agreements are enforceable if there are terms and conditions presented to the user to provide the user with requisite notice. For example, the Second Circuit Court in Specht v. Netscape[20], found that a click-wrap license was unenforceable because to view the terms of the license agreement, the user was required to scroll to the bottom of the webpage. The court reasoned, "Plaintiffs may have been aware that an unexplored portion of the Netscape webpage remained below the download button does not mean that they reasonably should have concluded that this portion contained a notice of license terms." The court concluded that where a user was "urged to download free software at the immediate click of a button, a reference to the existence of license terms on a submerged screen is not sufficient to place consumers on inquiry or constructive notice of those terms."

---

[20] Specht v. Netscape No. 01-7860 (L) (2d Cir., October 1, 2002)

4.11.   NO MEETING OF MINDS
The Indian Contract Act, 1872 provides that two or more persons are said to consent when they agree upon the same thing in the same sense[21]. This meeting of minds is however absent in the case of click wrap agreements in that since these contracts are contracts of adhesion, they are mostly one sided. Due to the complicated legalese and the lengthy details in such agreements, the user generally does not read the terms mentioned in them and assents to them without any meeting of minds. This is however dangerous because sometimes the users often give permission to share the user's data with the free online service's partners. These partners are often advertisers and marketers who collect data on users to build customer profiles from the information they receive from the online services through either web cookies or information that user post freely to their user profiles. The partners and advertisers use the customer profiles they created to target users with customized advertisements reflective of theneeds and wants of the particular user.

4.12.   JUDICIAL PRECEDENTS
India does not have any judicial history on the enforceability of click wrap agreements though the Information Technology Act, 2000 contains some provisions about electronic records, their attribution, acknowledgment and

dispatch. However, in the absence of any clear law on the subject, the only next best option is to look at some foreign decisions on the subject. There are a few cases relevant to the validity of click wrap license agreements decided by courts in USA.

Compuserve v. Patterson[22] is a case relating to a non mass-market click wrap license agreement. Compuserve, the plaintiff, was a computer information service headquartered in Columbus, Ohio. It contracted with individual

---

[21] Section 13, Indian Contract Act, 1872

[22] Compuserve v. Patterson 89 F.3d 1257 (6th. Cir.1998)

---

subscribers, such as Patterson, the defendant, to provide access to computing and information services via the Internet. Patterson was a resident of Houston, Texas subscribed to Compuserve and he also placed items of 'shareware' on the Compuserve system for others to use and purchase. Patterson entered into a 'Shareware Registration Agreement' (SRA) with Compuserve. Under the SRA, an online agreement, Compuserve was entitled to a percentage of the fee when a user paid a shareware licensing fee.

After that Compuserve would pass the remainder to the shareware's creator. The SRA also referred two documents which are the CompuServe Service Agreement (Service Agreement) and the Rules of Operation. Both of themexpressly provide the agreements would be governed and construed by Ohio law. Later, Compuserve began tomarket a similar product by using software that infringed the Patterson's trademark used in his shareware program.When Patterson complained, Compuserve sought from an Ohio court a declaratory judgment that it was notinfringing on any of the Patterson's trademark. The appellate court held Patterson's contacts with Ohio weresufficient for the Ohio court to exercise personal jurisdiction over the non-residence. The court also reasonedPatterson manifested assent to the SRA, which by its terms was to be governed by Ohio law, by typing 'Agree'at various points in the agreement. Therefore, a contract formed in the form of click wrap was held enforceable. From the Hotmail Corporation v. Money Pie Inc.[23], case even though the court did not directly address the validityof this online agreement, the judgment implied the validity of click wrap license agreement which is a good signfor the electronic commerce community.

Another case relating to click wrap contracts is Caspi v. The Microsoft Network,LL.C.[24] et al. This case was a class action. Subscribers to on-line computer service, the plaintiff, brought action against the Microsoft Network (MSN), an Internet service provider (ISP) and the defendant, to recover for the way it rolled over service into more expensive plans. The issue of the case is whether a forum selection clause contained in an on-line subscriber agreement is enforceable. From the fact, before becoming an MSN member, a prospective subscriber is prompted by MSN software to view multiple computer screens of information, including a membership agreement which contains the above clause. MSN's membership agreement appears on the computer screen in a scrollable window next to blocks providing the choices "I Agree" and "I Don't Agree." Prospective members assent to the terms of the agreement by clicking on "I Agree" using a computer mouse. Prospective members have the option to click "I Agree" or "I Don't Agree" at any point while scrolling through the agreement.

Registration may proceed only after the potential subscriber has had the opportunity to view and has assented to the membership agreement, including MSN's forum selection clause. No charges are incurred until after the membership agreement review is completed and a subscriber has clicked on "I Agree." The Superior Court, Appellate Division, by affirming the trial court's decision, held the application of MSN's forum selection clause at Washington did not contravene public policy and would not inconvenience a trial. Another court was more explicit in its reasoning relating to the validity of click wrap agreements.

In i.LAN Systems, Inc. v. Netscout Service Legal Corp.[25], a Federal District court upheld a click wrap contract. In this case, i.LAN provided a network monitoring service to customers and purchased software from Netscout. Netscout and i.LAN signed an agreement allowing i.LAN to resell Netscout's software to customers. However, i.LAN wanted to rent the software to customers. This was a practice Netscout claimed was not allowed under the click wrap license contained in the software itself. In reaching its decision, the court focused on whether click wrap licenses as a rule were enforceable. The court held that they were and that by clicking on "I agree," i.LAN had overtly consented to the terms. This explicit assent was the key to the court's determination that the click wrap agreement was not invalidated by the earlier purchase order agreement between the parties

4.13. BROWSE WRAP AGREEMENT

---

[25] I.LAN Systems, Inc. v. Netscout Service Legal Corp 183 F. Supp. 2d 328 (D. Mass. 2002)

A Browse-wrap agreement is one where the terms of an agreement are located on a website, but are often connected to the main web page of the product by a hyperlink to another web page that contains the contracts terms and conditions. Normally there is no affirmative manifestation of assent necessary to agree with the terms located on the linked web page. The customer must also affirmatively click the hyperlink to even access and become aware of the terms of the agreement.

Enforceable browse-wrap agreements have two factors in common. First, they include sufficient notice of the terms. Second, the actions of the Internet user clearly manifest acceptance of the terms.

4.14. BROWSE WRAP AGREEMENTS NOT ENFORCEABLE

In Specht v. Netscape Communications Corporation[26] the dispute was whether users of Netscape's software, who downloaded it from Netscape's Web site, were bound by an agreement to arbitrate disputes with Netscape, where Netscape had posted the terms of its offer of the software (including the obligation to arbitrate disputes) on the Web site from which they downloaded the software. The court ruled against Netscape because the users would not have seen the terms Netscape exacted without scrolling down their computer screens, and there was no reason for them to do so.

Had plaintiffs scrolled down instead of acting on defendants' invitation to click on the 'Download' button, they would have encountered the following invitation: 'Please review and agree to the terms of the Netscape Smart-Download software license agreement before downloading and using the software. The court found the evidence did not demonstrate that one who had downloaded Netscape's software had necessarily seen the terms of its offer and ruled the agreement unenforceable. As a result of this case, it is widely suggested that the icon for the terms of use agreement be placed in the upper left-hand quadrant of the home page and that all visitors be channeled through the home page. The reason for this suggestion is that the court will take judicial notice of the fact that all

---

[26] Specht v. Netscape Communications Corporation 06 F.3d 17 (2d Cir. 2002).

Internet pages open from the upper left-hand quadrant, thus the defendant must overcome the presumption that the icon was viewed. Without this presumption, the plaintiff has the burden of proving the defendant did see the icon.

Hoffman v. Supplements Togo Management, LLC Although a forum selection clause is generally enforceable, if it is hidden from view on a website and can only be located by following a circuitous path, then it will not be enforced against the consumer.

A consumer sued the seller of a dietary supplement, alleging both statutory and common law fraud, specifically that the seller had made false and exaggerated representations, lacking in scientific or objective support. The consumer purchased the product over the internet. Prior to filing an answer, the seller moved to dismiss the lawsuit, arguing the consumer was precluded from suing in New Jersey based upon a forum selection clause contained within a disclaimer on the seller's internet website. It said that a lawsuit may only be filed in the state of Nevada. The lower court granted the motion on this ground.

The consumer appealed, and the Appellate Division reversed and remanded, holding that the forum selection clause was presumptively unenforceable. It agreed that, generally, a seller may designate an exclusive forum in a contract. Also, a forum selection clause is generally enforceable where it is not the product of fraud or of undue bargaining power, would not violate public policy, and would not seriously inconvenience the parties at trial. In applying these standards of enforceability, a critical consideration is whether the consumer was provided with fair notice of the clause. Here, it found that the company structured its website in a way that did not give potential purchasers reasonable notice of the forum selection clause. The Court held that the clause was unreasonably masked from the view of a prospective purchaser because of a circuitous mode of presentation. To see the arbitration text, the consumer had to scroll down to a submerged portion of the webpage. The consumer also alleged, unrebutted, that if he added another item to an electronic shopping cart, the webpage would skip ahead to new pages that did not contain the clause.

4.15. BROWSE WRAP AGREEMENT HELD ENFORCEABLE

In the case of Register.com, Inc v. verio Inc.,[27] court held that the users of a Web site had actual knowledge of

the terms and conditions posted on the site. Register sells Internet domain names and Verio designs and develops Web sites. Register was contractually required to make its customers' contact information available free of charge to the public for any lawful purpose. An entity making a query through Register's Internet site would receive a reply furnishing the requested information, captioned by a legend devised by Register, which stated, 'By submitting a WHOIS query, you agree that you will use this data only for lawful purposes and that under no circumstances will you use this data to. support the transmission of mass unsolicited, commercial advertising or solicitation via email.' Despite this, Verio devised an automated robot to retrieve the information and use it for marketing purposes on a regular basis. The District Court granted Register's preliminary injunction, which was upheld by the Second Circuit.

On appeal, Verio had conceded that it was aware of the restrictions Register placed on the use of the contact information and that by using such information for its own marketing opportunities it was violating those restrictions. Nevertheless, Verio argued that it never became contractually bound to the conditions imposed by the legend because the legend did not appear on the screen until after Verio had made a query and received the desired information from Register. Verio claimed that it did not receive legally enforceable notice of the terms of use.

The court, noting that Verio had actual knowledge of the terms, stated, 'It is standard contract doctrine that when a benefit is offered subject to stated conditions, and the offeree makes a decision to take the benefit with knowledge of the terms of the offer, the taking constitutes an acceptance of the terms, which accordingly become binding on the offeree.' The court made a point to distinguish the facts at issue there from those in Specht. The

---

[27] Register.com, Inc v. verio Inc., 356 F. 3d 393 (2d Cir. 2004).

---

two cases were 'crucially different', the court found, because in Specht, 'there was no basis for imputing to the downloader's of Netscape's software knowledge of the terms on which the software was offered, ' whereas Verio had 'admitted that, in entering Register's computers to get the data, it was fully aware of the terms on which Register offered the access.'

The Verio Court relied on basic contract law stating:

While new commerce on the Internet has exposed courts to many new situations, it has not fundamentally changed the principles of contract. It is standard contract doctrine that when a benefit is offered subject to stated conditions, and the offeree makes a decision to take the benefit with knowledge of the terms of the offer, the taking constitutes an acceptance of the terms, which accordingly become binding on the offeree[28]. Ticketmaster Corp. v.Tickets.com, Inc.[29], and Southwest Airlines Co. v. BoardFirst, L.L.C,[30]. One plausible reading of the cases is that

---

[28] See, e.g., Restatement (Second) of Contracts § 69(1)(a) (1981) (Silence and inaction operate as an acceptance ... where an offeree takes the benefit of offered services with reasonable opportunity to reject them and reason to know that they were offered with the expectation of compensation.'); 2 Richard A. Lord, Williston on Contracts Section 6:9 (4th ed. 1991) .

[29] Ticketmaster Corp. v. Tickets.com, Inc., 2000 WL 1887522 (C.D.Cal. Aug. 10, 2000), Ticketmaster Corp. ("Plaintiff") and Tickets.com, Inc. ("Defendant") are competing companies in the business of selling event tickets to the public. From 1998 to July of 2001, the Defendant used an electronic program called a "spider" to temporarily download Plaintiff's event pages to its RAM to gain access to the source code for each page, and extract factual data embedded in each page. Defendants did this to obtain information regarding the dates, times and venue locations of events for the purpose of displaying the information on its own webpage. The rest of the event page, including Plaintiff's copyrightable information, was immediately discarded and not used by the defendant nor displayed to the public. From March 1998 to early 2000, in instances where plaintiff was the only seller of tickets to certain events, defendant provided a "deep link" on its website, by which the customer could click on a link which stated "buy this ticket from another online ticketing company" and be transferred to the interior of the plaintiff's website. From there, the customer could purchase tickets from the plaintiff. Plaintiff filed suit against the defendant alleging trespass to chattels, copyright and contract claims. Defendant filed a motion for summary judgment on all of the claims.

[30] Southwest Airlines Co. v. BoardFirst, L.L.C, 2007 WL 4823761 N.D. Tex (2007). Plaintiff, Southwest

---

Airlines Co., is a Dallas-based domestic airline carrier. Southwest maintains an "open seating" arrangement whereby passengers are not assigned specific seats, but rather are divided into three distinct ("A", "B" and "C") boarding zones. Those with and "A" boarding zone are given preferential seating to those in both the "B" and "C" boarding zones, making Zone "A" the most desirable. Boarding zones are assigned during the 24-hour period proceeding departure and are awarded on a "first come, first served" basis. The earlier a customer checks in during the 24-hour period, the more likely it is that the customer will be awarded an "A" boarding pass. Defendant, BoardFirst, L.L.C., is a corporation courts in browse-wrap cases show greater solicitude to consumers than to businesses, and will enforce browse- wraps primarily in business-to-business rather than business-to-consumer transactions, and perhaps only in repeat transactions as in Verio. Courts may be willing to overlook the utter absence of assent only when there are reasons to believe that the defendant is aware of the plaintiff's terms. That awareness may be more likely with corporations than individuals, perhaps because corporations are repeat players, because they themselves employ terms of use and therefore should expect that others will, or because some evidence in each individual case suggests they are in fact more aware of those terms. It should be noted that while courts will, in general, enforce browse-wrap agreements, provided they include sufficient notice of the terms and the Internet user's actions clearly manifests acceptance of the terms, there are numerous exceptions to the general rule. In particular, courts often refuse to enforce specific Internet terms of use against consumers, particularly where those terms involve class-action waivers, arbitration requirements and inconvenient forum choices. In another case of Hubbert v. Dell Corp[31]. The court noted that, unlike other cases in which courts had upheld browse wrap agreements, the seller's website did

---

whose sole reason for being is to assist Southwest Airline passengers secure "coveted" Zone "A" boarding passes. On an average day, BoardFirst assists Southwest customers in obtaining around 100 boarding passes. BoardFirst's business model works as follows: After booking their ticket, Southwest customers must navigate away from the southwest.com website and onto BoardFirst's site. The customer then must provide their name, confirmation number, and credit card information to allow BoardFirst to act as their agent. With this information, the agent logs onto Southwest's website when the customer's 24-hour "Check-In" window opens. The agent then uses the customer's name, confirmation number, and credit card to check-in with the hope of securing a Zone "A" boarding pass. If all goes according to plan, a Zone "A" boarding pass should appear on the screen in the customer's name. After completing the check-in process, BoardFirst does not print the pass, but it does charge the customer's credit card $5.00 per pass. BoardFirst then sends out an e-mail to the customer informing them that they may print their ticket through southwest.com or at a Southwest Airlines.

[31] Hubbert v. Dell Corp., 359 III App. 3d 976, 296 III Dec. 258, 835 N.E. 2d 113, 121-22 (3d. App. Ct 2005). Plaintiffs purchased computers online through defendant's website in 2001 and 2002. The computers contained the "Pentium 4" microprocessor which was advertised by the defendant as being the "fastest, most powerful Intel Pentium processor available." The plaintiffs asserted that the Pentium 4 is actually slower, less powerful and provides less performance than either the Pentium III or an AMD Athlon processor, but costs considerably more. The plaintiffs challenged the defendant's marketing in connection with the Pentium 4 processor describing it as false, misleading, and deceptive. Due to this misrepresentation the plaintiffs sought damages that amount to around $75,000 per person.

---

not have a conspicuous notice that "Entering this sit will constitute your acceptance of these terms and conditions".[32]

4.16.   TERMS OF SOFTWARE LICENSE

A software license agreement usually specifies the duration of the software license and of the vendor's associated services (e.g., maintenance and technical support). A software license can be time-limited or perpetual, and associated services can be available during the entire term of the software license or for a limited period.

A time-limited software license expires when the specified license period ends, but the software license agreement might provide for the renewal or extension of the term. A renewal or extension might be automatic (unless a party opts out), at a party's sole option, or require the agreement of both parties. Optional renewals and extensions are usually subject to limitations or pre-conditions, such as timely renewal notice and prompt payment of fees. A renewal that requires the agreement of both the software vendor and the customer provides flexibility but no certainty.

A perpetual software license continues unless and until the license is lawfully terminated, but the customer's right to receive important services necessary for the use of the software (e.g. software maintenance or technical support) is usually limited to a specified period.

Fees payable for a software license and associated services usually reflect the term of the license and associated services and the customer's ability to renew or extend the term. Fees payable for automatic or optional license term renewals or extensions are usually either pre-determined or based on a formula (e.g. annual cost-of-living

increases or a specified discount from the software vendor's then-current standard fees).

---

[32] Ibid.,

4.17.   INDIAN SUPREME COURT'S RULING ON SOFTWARE LICENSING FEES

The Supreme Court of India delivered a landmark ruling on March 2, 2021 in the case of **Engineering Analysis Centre of Excellence Private Limited**. The judgment settled a long-running contentious issue over how payments made by Indian customers to non-resident suppliers for the use or resale of computer software should be characterized, providing much-needed tax certainty on the issue.

4.17.1.   Facts Of The Cases

A batch of 103 appeals was pending before the court for a decision on the issue filed by either the revenue department or taxpayers as a result of the High Court's divergent decisions. The controversy was about the taxation of software payments as royalty or business income in the non-resident taxpayers' hands.

The court divided the pending cases into four broad categories based on the agreements between the supplier/licensor of software and distributors/end-users:

∉   Purchase of computer software directly by a resident from a non-resident supplier or manufacturer;

∉   Purchase of software by a resident Indian company acting as a distributor or reseller and reselling to Indian end-users;

∉   Purchase of software by a non-resident distributor from a non-resident supplier and reselling to Indiandistributors or end-users; and

∉   Computer software bundled with hardware sold by non-resident suppliers to resident Indian distributorsor end-users.

The revenue department had taxed payments as royalties under the Income Tax Act and relevant agreements for the avoidance of double taxation (DTAs) as it believed the transactions involved a transfer of copyright. Taxpayers, however, were claiming the payments as business income.

The Supreme Court mainly considered the provisions of the Copyright Act 1957 (Copyright Act), the Income Tax Act, 1961 (ITA), and the relevant DTAs in deciding the issue before it.

The Supreme Court held that the amount paid by resident Indian end-users/distributors to non-resident computer software manufacturers/suppliers for the use or resale of computer software through end-user license agreements (EULAs) or distribution agreements, cannot be classed as a royalty payment. The court concluded that the persons referred to in section 195 of the ITA are not liable to withhold tax out of payments made.

   The court analyzed samples of distributor agreements and EULAs and delineated the following relevant facts:

     ∉   The distributor gets only a non-exclusive and non-transferable license to resell computer software;

∉   No copyright in the computer program is transferred to either the distributor or to the ultimate end-user;

∉   The end-user can use the computer program itself, but there is no further right to sub-license or transfer or reverse-engineer, modify, reproduce in any manner otherwise than permitted by the license to the end-user;

∉   The distributor pays the computer program's price as a good, in a medium that either stores the softwareor embeds it in the hardware;

∉   The distributor does not get the right to use the product; and

∉   The end-user can only use the computer program by installing it in the computer hardware owned by

theend-user and cannot in any manner reproduce it for sale or transfer.

4.18.   DETERMINING THE TRANSFER OF COPYRIGHT UNDER THE COPYRIGHTACT

The court's first task was to analyse the Copyright Act in the cases before it to establish whether there was a

transfer of copyright or not.

The court observed that a copyright is an exclusive right that restricts others from doing certain acts. It noted that a copyright is an intangible right, in the nature of a privilege, entirely independent of any material substance. Owning copyright in a work is different from owning the physical material in which the copyrighted work may be embodied.

Computer programs are categorized as literary work under the Copyright Act. Section 14 of the Copyright Act states that a copyright is an exclusive right to do or authorize the doing of certain acts in respect of a work, including literary work.

The court observed that a transfer of copyright would occur only when the owner of the copyright parts with the right to do any of the acts mentioned in section 14. In the case of a computer program, section 14(b) speaks explicitly of two sets of acts:

1.   The seven acts enumerated in sub-clause (a); and

2.   The eighth act of selling or giving of commercial rental or offering for sale or commercial rental any copy of the computer program.

The seven acts as enumerated in section 14(a) in respect of literary works are:

1.   To reproduce the work in any material form, including the storing of it in any medium electronically;

2.   To issue copies of the work to the public, provided they are not copies already in circulation;

3.   To perform the work in public, or communicate it to the public;

4.   To make any cinematographic film or sound recording in respect of the work;

5.   To make any translation of the work;

6.   To make any adaptation of the work; and

7.   To do, in relation to a translation or an adaptation of the work, any of the acts specified in relation to the

work in sub-clauses (1) to (6).

95

The right to reproduce a computer program and exploit the reproduction by sale, transfer, or licence is the computer program owner's exclusive right.

In addition, making copies or adapting a computer program to use it for the purpose for which it was supplied,or to make back-up copies as temporary protection against loss, destruction or damage to use the computer program, does not constitute an act of infringement of copyright under section 52(1)(aa) of the Copyright Act.

The court held that a license from a copyright owner, conferring no proprietary interest on the licensee, does not involve parting with any copyright. It said this is different from a licence issued under section 30 of the Copyright Act, which grants the licensee an interest in the rights mentioned in section 14(a) and 14(b) of the Copyright Act.

In the cases before the court, the license granted via a EULA is not a licence under section 30 of the Copyright Act, which transfers an interest in all or any of the rights contained in sections 14(a) and 14(b) of the Copyright Act, but it is a license that imposes restrictions or conditions for the use of computer software.

The court noted that the EULAs in all the appeals do not grant any such rights or interest, least of all, a right or interest to reproduce the computer software. The reproduction is expressly interdicted.

As such, what is 'licensed' by the foreign, non-resident supplier to the distributor and resold to the resident end-user, or directly supplied to the resident end-user, is the sale of a physical object which contains an embedded computer program. Therefore, this is a sale of goods. The payments made by end-users and distributors are akin to a payment for the sale of goods and not for a copyright license under the Copyright Act.

4.19.   CHARACTERIZING PAYMENTS UNDER A TAX TREATY AND INCOME TAXACT

Source rules for royalty taxation are contained in section 9(1) (vi) of the ITA. The rule states that income payable by an Indian resident would be deemed to accrue or arise in India if the royalty is for the purpose of earning any income from any source in India. Explanation 2 to section 9(1)(vi) defines 'royalty' as a consideration for the transfer of all or any rights (including granting a licence) in respect of any copyright.

Explanation 4 was inserted in section 9(1)(vi) of the ITA in 2012 to clarify that the "transfer of all or any rights" in respect of any right, property, or information included and had always included the "transfer of all or any right for use or right to use a computer software". The court ruled that Explanation 4 to section 9(1)(vi) expanded the scope of royalty under Explanation 2 to section 9(1)(vi).

Before expanding the royalty definition under the ITA in 2012 to include payments for software, a payment could only be treated as royalty if it involved a transfer of all or any rights in copyright by way of license or other similar arrangements under the Copyright Act.

The court held that once a DTA applies, the ITA provisions can only apply to the extent they are more beneficial to the taxpayer.

The court, after referring to Explanation 4 to section 9 of the ITA and Article 3(2) of the DTA and the CBDT Circular No. 333 fuck you dated April 2 1982 held that the definition of 'royalties' will have the meaning assigned to it by the DTA. As such, 'royalty', when occurring in section 9 of the ITA, has to be interpreted with reference to Article 12 of the DTA.

The court held that any expansive language contained in the explanations to section 9(1)(vi) of the Act would have to be ignored if it is broader and less beneficial to the taxpayer than the definition contained in the DTA. The term 'copyright' has to be understood in the context of the Copyright Act.

The court said that by virtue of Article 12(3) of the DTA, royalties are payments of any kind received as a consideration for "the use of, or the right to use, any copyright "of a literary work includes a computer program or software.

The court stated that regarding the expression "use of or the right to use", the position would be the same under explanation 2(v) of section 9(1)(vi) because there must be, under the licence granted or sales made, a transfer of any rights contained in sections 14(a) or 14(b) of the Copyright Act. It said that to this extent there will be no difference in the position between the definition of 'royalties' in the DTAs and in Explanation 2(v) of section 9(1)(vi) of the ITA.

As the end-user only gets the right to use computer software under a non-exclusive licence, ensuring the owner continues to retain under section 14(b) of the Copyright Act read with sub-section 14(a) (i)-(vii), payments for computer software sold/licenced on a CD/other physical media cannot be classed as a royalty.

In all the cases before the court, the payments to non-residents by both the end-users and distributors were held as not being taxable as royalties.

4.20.   INTERPRETATION OF TAX TREATIES

The judgment also contained some crucial observations on the interpretation of tax treaties.

The court said the definition of royalties in the tax treaties considered in the cases is either identical or similar to the definition contained in Article 12 of the OECD Model Tax Convention and noted that the Commentary on the OECD Model would have persuasive value for the interpretation of the term 'royalties'.

The court noted that India took positions about the OECD Commentary, but India and the other contracting states made no bilateral amendment in accordance with its position to change the definition of royalties in any of the DTAs reviewed in the appeals.

The court held that taxpayers have a right to know their position and obligations under a treaty and they can rely on the OECD Commentary and OECD Model Tax Convention, which are used without any substantial change by bilateral DTAs, in the absence of judgments of municipal courts clarifying the same, or in the event of conflicting municipal decisions.

The court noted that India had entered or amended tax treaties with several countries after expressing its reservation, yet the definition of royalty was not changed and remained similar to the OECD Model definition. Hence, its reservation would not apply.

4.21.   KEY TAKEAWAYS

The judgment finally settles a long-drawn tax dispute on the taxation of cross-border payments for computer software use and will provide much-needed tax certainty on the issue.

The mode of delivery of software, for example, through downloads or software as a service, and business models are fast-changing, particularly due to the digitalization of businesses. Taxpayers paying for software need to analyse their case based on the fact matrix and the four categories of cases dealt with by the court. The same principle would apply to disputes pending with the subordinate courts.

As payments cannot be classed as royalties, taxpayers should reassess their positions to determine whether customs laws, the goods and services law or equalization levy would apply for such transactions.

V.   LEGAL ASPECTS OF REVERSE ENGINEERING

5.1.   MEANING AND DEFINITION OF REVERSE ENGINEERING

Reverse engineering may be defined as ―Analysing a subject system to identify its current components and their dependencies and to extract to create system abstractions and design information." The technique of reverse engineering has been defined by the US Supreme Court in Kewanee Oil Co. v. Bicron Corp. as ―starting with the known product and working backward to divine the process which aided in its development or manufacture.‖ Engineering may be categorised into two – Forward and Reverse engineering. Forward engineering is a process through which designs, abstractions, drawings are converted into physical product. As the name suggests, Reverse engineering is a process through which the final product or the end result is analysed and through that end product the methods and process involved in the physical implementation of such product is examined. In other words, Reverse engineering may be defined as a process to decipher the know-how or the technology involved in the device or object by scrutinizing the structure or function or the human artefact thereby giving birth to a new product, with the aid of such deciphered technique or the same product with a better function or the same product with the same function. A human made artefact denotes that the technical know-how already exists as a prior art or is a part of public domain. The common misconception prevailing among the academicians is that, the end product obtained by employing or utilising the technique of Reverse engineering often results in duplication of the original product which in turn would infringe the right holder of the original product. It is not necessary that such products would always turn out to be an imitation of an existing product. The reverse engineering technique in majority of the cases provides with significant advancement of the respective product thereby improving the quality and function of that particular product. Reverse engineering is an essential part of innovation and its fundamental purpose is discovery albeit of path already taken. REVERSE ENGINEERING AND ITS USES – Reverse engineering is a long accepted practice. Due to various legislations, reverse engineering during early 1970's had been under siege. The importance of Reverse engineering and its benefits were demonstrated by three annual conferences. These conferences to a certain extent had changed the perception prevailed in the minds of academicians, manufacturers and industrialist and it helped in shaping the concept of Reverse engineering. Of

late, its use has been recognized across the world and is considered to be one of the most beneficial business methods. Reverse engineering enhances the design, creates a new product and provides with a better technique thereby stimulating compatibility and interoperability in the market. Reverse engineering is often opted for learning, changing or repairing a product, providing related service, developing compatible product, creating a clone of the product and improving the product. engineering is responsible for the ubiquitous 'IBM Compatible' computers, and is called emulation in software industry."

5.2.   THE LEGITIMACY OF REVERSE ENGINEERING

The legality of reverse engineering has stirred controversies in the arena of intellectual property rights. Over the years, the misconception that prevailed regarding reverse engineering is that, it is a copy paste of an invention that belongs to another person which in turn violates his rights. What academicians and Lawyers fail to understand is that, Reverse engineering technology is beyond dissembling, extracting information and copying. As stated earlier, the end product of reverse engineering need not be an imitation of the originally manufactured product. The reverse engineering technology enhances competition and provides the public with cheap and best technology. The Intellectual property law in the context of Reverse engineering mainly deals with two questions. Firstly, whether reverse engineering aids in infringement of IP rights? And secondly, the end product resulting from such technique is an imitation of the original product? The different regimes of IPR treat reverse engineering differently. However from the definition of reverse engineer it is evident that, the extracted function or technique provides a new product or the technique used in the earlier product would be enhanced which may or may not result in a new product. But an exact imitation or copy of the originally manufactured product would amount to infringement. In the case of substantial improvement to the structure and function would not infringe the exclusive rights conferred to the right holder. The process of reverse engineering is expensive as well as time consuming.

In the manufacturing industry favors the reverse engineering technique. Since reverse engineering a product is as difficult as innovating and manufacturing an original product. Reverse engineering technique may continue to be lawful as long as the original product has been acquired by a fair and honest means. Reverse engineering a software product is considered to be illegal under the Copyright Act. While reverse engineering the software, the software should be dissembled and the original program should be copied in the system. Making of such copies during the de compilation process is known as ―Intermediate copies‖. Making of intermediate copies shall result in the technical infringement of copyright. The Unites States Copyright Act permits reverse engineering although there is no express provision dealing with the same. Reverse engineering is covered under the Fair Use and Adaptation Rights doctrine. The legality of reverse engineering was upheld and de compilation for the purpose of reverse engineering was also considered to be legal. The DMCA provides protection for lawfully obtained computer programs which gives a strong legal back up for the technique of software reverse engineering. The European Union also expressly provides for Reverse engineering. The Directive On Legal Protection of Computer Program adopted by EU permits reverse engineering. The position of India in relation to software Reverse engineering is considered to be the weakest. Although India provides legal back up for de compilation the position on reverse engineering is not precise. The Patent law so far does not recognise the right of reverse engineering. However the law does not expressly prohibit reverse engineering. A patent infringement does not arise when the significant modification or improvement satisfies the triple test of patentability requirement. Under the Trade Secrets Law, reverse engineering is considered to be a lawful method for obtaining trade secrets. California Trade Secrecy law provides an express provision for reverse engineering. The US Courts consider reverse engineering as an important factor in maintaining equilibrium in IPR Laws.

5.2.1.   Prohibition Clause On Reverse Engineering

Most Reverse engineering cases focus on the acts of the defendants. However defendants may also raise defenses that focus on the acts of the Plaintiff.[1] Prohibition clause of reverse engineering in a licensing agreement at least arguably restrains trade because it limits a software user's access to information needed to produce comparable or even compatible products.[2] One such defense, if the technology is legally protected by trade secret and copyright, is copyright misuse, this leads to monopolization, attempts to monopolize, refusal to deal, and tying arrangements might be relevant to these general situations. A court will consider whether a copyright holder is illegally extending copyright protection through a contract or license which contains a clause that restricts reverse engineering of the copyrighted material. The Fourth Circuit decided a series of case on these issues and held that such clauses are illegally extensions. But because of the extreme facts in each case, as discussed below, these rulings may or may not be adopted elsewhere.

5.3.   MONOPOLIZATION

The offense of monopolization under section 2 of the Sherman Act.[3] Requires that plaintiff : 1) defines a "relevant market" 2) show that defendant possesses "monopoly power" within this market and 3) demonstrate that this monopoly power was acquired or maintained by anticompetitive "willful" acts, "as distinguished from growth or development as a consequence of a superior product, business acumen, or historic accident".

---

[1] Soma, supra note 32, at 223.

[2] Seungwoo Son, Can Black Dot (shrink wrap) Licenses Override Federal Reverse engineering Right?: The Relationship Between Copyright, Contract, and antitrust Laws, 6 Tul. J. Tech. & Intell. Prop. 63 (2004).

[3] 15 U.S.C. section 2(1994) provides: Every person who shall monopolize, or attempts to monopolize, or combine or conspire with any other person or persons, to monopolize, any part of the trade or commerce among the several states, or with foreign nations, shall be deemed guilty of a felony.."

In Lasercomb Am., Inc. v. Reynolds[4], the plaintiff produced software for designing dyes to make boxes. The company then distributed the software under a license that contained a noncompetition clause which restricted the license from developing his own dye-making software or assisting others in developing such software for a period of ninety-nine years.[5] The defendant, Reynolds, did not sign the license agreement, but obtained a copy of the software which he reverse engineered to remove certain safeguards and then sold infringing copies of the software. Lasercomb sued for copyright infringement and Reynolds pled copyright misuse as a defense. The fourth circuit effused to enforce clause as an 'anticompetitive restraint' that sought to 'control competition' beyond the level granted by copyright law. The court held that Reynolds was not harmed by the clause.

In PRC Realty Systems Inc., v. National Ass'n of Realtors[6] an unpublished opinion, the plaintiff licensed software that allowed access to real estate multiple listing information. PRC's license included a clause requiring the license to exert its best efforts to also promote the multi listing publishing business. The national Association of Realtors licensed the PRC software and then independently developed a desktop published system that allowed licenses of PRC's software to publish in house multiple listings on a laser printer. PRC sued for breach of contract and Copyright infringement. The district court held for PRC, but the Fourth Circuit reversed, emphasizing the public policy concerns articulated in Lasercomb. The Fourth Circuit stated in its 'best efforts' clause, PRC attempted to use its copyright as a hammer to crush all further development of an independent idea by the defendant or any other licensee, it thus refused to continue an injunction enforcing the contract, but did uphold one count for breach of contract based on the fact that the defendant made non-exclusive license arrangements with parties other than PRC.

---

[4] Lasercomb Am., Inc v. Reynolds, 911 F. 2d 930, 97 (4th Cir. 1990).

[5] Ibid.,

[6] Prc Realty Systems Inc., v. National Ass'n of Realtors, 766 F. Supp. 453, 456 (E.D. Va. 1991).

VI.   STATUS OF COMPUTER SOFTWARE AROUND THE GLOBE

6.1.   POSITION IN U.S

The American legal system does not generally regulate dealing with the exploitation or the utilization of copyrighted works. Limitations on exclusive rights, such as fair use doctrine or the library exceptions are believed to be over ride by contract.[1] In practice a non-infringing use U.S. copyright Act may not be transformed into an infringement, but it may constitute a breach of the license agreement. Although such contracts might be very well to enforceable under state contract law, the question whether they conflict with potentially overriding federal copyright policy issues. In deed the analysis of the enforceability of such contract is somewhat complicated by the federal structure of the U.S. constitution, where copyright law falls under the power of congress while contract law falls under state power.

In effect a contractual cause of action that is otherwise enforceable under state contract law can be pre-empted by federal copyright law policy either under the express pre-emption clause of sec 301 of U.S. Copyright Act or under the general supremacy clause of the U.S. constitution.[2] Under section 301 of the Copyright Act, federal copyright law expressly pre-empt all state " legal or equitable right that are equivalent to any of the exclusive rights with the general scope of copyright as specified by sections 102 and 103.[3] Two requirements must be met for state created right to be. Pre-empt under section 301.

The right must deal with a fixed work of authorship that comes within copyright subject matter and second they must be equivalent to any of the exclusive rights granted under section 106 of the Copyright Act. In practice,

licensors not only attempt to extend their control by contract over non copyrightable subject matter, but also seek to take away the privileges of the uses recognized under the Copyright Act. Prohibition on the reverse engineering

[1] NII Task Force, white paper September 1995, P.49-50.
[2] U.S. Constitution, Article VI section 2.

of computer programs has become a common feature in fully negotiated and non- negotiated contracts. These agreements should be enforced unless they are unconsunable or unless they implicate the social policy decisions underlying the Copyright Act.[4] This is an argument in a case. This leads to examine the enforceability of restrictive contractual terms under the supremacy clause pre-emption analysis.

The Copyright regime is thus designed to strike a balance between providing an incentive to create through the grant of a limited statutory monopoly in the form of copyright and maintaining the free flow of information on which creativity is built. Fair use is allowed under this concept. Consequentially, state enforced contracts that attempt to circumvent the fair use doctrine or other statutory limitations are likely to upset this balance and to stand as an obstacle to the accomplishment of the full purpose and objectives of copyright law. The compatibility of a particular arrangement copyright policy not only depends on the circumstances of each case but also on the judge's perception of the rationale behind the limitation concerned.

If the courts and commentators hold for example, that the fair use doctrine is pregfdtd solely on market failure considerations, then contractual arrangements that pjhgy to restried. The user's possibility to make fair use is likely to be hold enforceable. Unless they contain unconscionable terms. Since there contracts are deemed to allow the optimal allocation of reasons between the parties.[5] Finally the doctrine of pre-emption is perhaps ill-equipped to deal with the policy issues raised by this form of contracting. In the absence of relevant case law other than the vault decision, any inquiring into the compatibility of restrictive contract clauses with federal copyright policy under the supremacy clause preemption analysis remains speculative.

Hence the validity of software license which prohibits reverse engineering is remains speculative. U.S. permitting the software patents when the protection is under patent. The law itself prohibits reverse engineering, and prohibition of reverse engineering is not at all a matter and it is valid under patent law.

[4] Richman and Franklin1999, P.911 their argument has been endorsed by other authors, samuelson and Opsal 1933, p: 390.
[5] Ginsburg 2000, Bell 1998, P:560, Marges 1997, P:130.

6.2.   POSITION IN EUROPEAN UNION

The European community adopted Directive on the protection of computer programs. The directive was adopted on the basis of the recognition of investments related to software and the significant risk of copying made by third parties. And for the purpose of eliminating the differences among the member states on the juridical protection of computer programs.[6] The directive expressly declared that the choice of the use copyright for legal protection of software should be considered on merely a first step.[7] Accordingly, the directive limits the protection conferred on computer programs "per se", expressly excluding the ideas and principles on the basis of the said computer programs.[8] The law makers of E.U did intervene in contractual relations between rights owners and end-users byArticle 5, 6, and 9 of the computer program directive.

Article 9(1)[9] of the Directive expressly provides that "any contractual provisions contrary to the Art 6 or to the exceptions provided in Article 5(2) and 3 shall be null and void. It makes no sense to give the user the freedom under the Directive to perform certain acts without authorizations if the right holder can immediately retrieve control by contractual means. This implied contractual control in Europe might be less effective. However given the fact that licensing is often the only means by which a user can obtain software, the commission and the councilgave found it appropriate to limit the parties' freedom of contract in certain ways.

Hence a software license which prohibits reverse engineering is null and void in E.U. it cannot be enforce.

[6] Recital (5) - EC Directive 91/250.
[7] Recital (6) – EC Directive 91/250.
[8] Article 1 and 2 – EC Directive 91/250, objective and Authorship of computer program.
[9] Article 9(1) of the EC Directive 91/250, contained application of other legal provisions.

6.3.   POSITION IN INDIA

There is no specific law in India governing computer software. A computer software contract (called "Software

license agreement") is governed by the common law principles as embodied in the Indian Contract Act 1872. If the software is classified as "good", the Sale of Goods Act 1930 will also have relevance since it deals only with moveable goods and not with the tangible aspects of the goods.[10] The Sec. 2 (7) of the Sale of Goods Act defines "goods" as "every kind of movable property other than actionable claims and money, and includes stocks and shares, growing crops, grass …"

This definition is very wide and includes all types of movable properties, whether those properties are tangible or intangible. It would become a good provided it has the characteristics thereof having regard to (a) its utility; (b) capable of being bought and sold; and (c) capable of being transmitted, transferred, delivered, stored and possessed. If a software whether customized or non-customized satisfies these characteristics, the same would be goods.[11] In the judgement of Commissioner of Sales Tax v. Pradesh Electricity Board, electricity was considered as "goods" irrespective of its nature, or whether it was tangible or non-tangible, as it is capable of abstraction, consumption and use.[12] In Case of TCS the Supreme Court of India considered computer software as "goods" and stated that "even intellectual property, once it is put on to a media (e.g. Disk, CD or DVD)" would be treated as such.[13]

A valid software-contract it's important there is an offer, an acceptance of that offer or proposal and consideration for that offer and acceptance. A software-contract based on Indian Law must be covered by the licensing of computer software. The licensing gives the licensee a restricted right to use the software. The term of the license specifies the duties of the licensee of varying degrees. Thus it will be governed by the law of contract. In reference

---

[10] See TCS v. State of Andhra Pradesh 271 ITR 401 (2004).

[11] Ibid.,

[12] Commissioner of Sales Tax v. Pradesh Electricity Board (1969) 1 SCC 200

[13] Verma in Ullrich/Lejeune, Der Internationale Softwarevertrag, 2. Edition 2006, p. 778.

to Sec. 30 of the Copyright Act (India), "the owner of the copyright in any existing work or the prospective owner of the copyright in any future work may grant any interest in the right by license in writing signed by him or by his duly authorized agent."

An owner of the copyright may assign to anyone the copyright either wholly or partially and either generally or subject to limitations and either for the whole term of the copyright or and thereof. The assignment needs to be in writing to be valid.

Under the section 23 of the contract Act, the consideration or object of an agreement is unlawful means it is void. According to the section 25 of the Indian Contract Act says that the agreement without the consideration is void but there are some exceptions for some agreements where the consideration of the contracts is considered as void .for the quad pro quo which means something in return. Here the software is considered to be void if there is no consideration.

Sec 27 of the Indian Contract Act says that Agreement in restraint of trade void every agreement by which anyone is restrained from exercising a lawful profession, trade or business of any kind, is to that extent void. By applying this to the software license, which prohibits reverse engineering is not a valid one and it is not valid as to such provisions of the license agreement and if such provisions were taken away by the parties it is valid one. Such a contract under the Indian Contract Act is voidable one.

So the legal validity of software license which prohibits reverse engineering is not a valid.

VII.   CONCLUSION & SUGGESTIONS

Copyright is legally protects the creators of literary and artistic works. It has a bundle of rights given to copyrighted owners. It protects the published and unpublished works. It provides the rights to owner to use and authorize to use their works. But Copyright Act has some exceptions too, that restricts the authors cannot exercise their rights in some special circumstances. Under such circumstances the copyrighted work can use without the permission of the copyright owner. That special circumstance is called as fair use. Copyright protects the computer program as a literary work. Computer program cannot be copied by others without the authorization of copyrighted owner. But copyrighted computer program legally allowed for reverse engineering for the purpose of compatibility/interoperability. Without decompilation of computer program reverse engineer cannot do reverse engineering. For the purpose of reverse engineering the reverse engineer can make intermediate copying of computer program. Such intermediate copying of computer program does not amount to infringement. But the owners of the computer programs prohibit the reverse engineering by enforcing the software license. The prohibition of reverse engineering through a clause in the contract and through the law of confidence and may not be valid. In any event, software owners definitely enjoy a larger scope of protection with the DMCA permitting only specific exceptions to circumvent technological measures and thereby narrowing the scope of fair use

exceptions. The term "interoperability" of section 1201(f)(A) of the DMCA should be expansively interpreted in order to allow reverse engineering for a purpose other than interoperability if legitimate access is given or the central objective of reverse engineering is not to overcome the protective system protected by contract. Software owners can now have protection to ideas that are unprotected by copyright by introducing technological measures to protect the work and by disclosing elements that are required for interoperability. It remains to be seen how the

U.S. courts deal with this issues as access to idea and functional elements embodied in computer programs can are essential for technical and social progress. The European Community at an early stage also recognized the importance of ensuring a protection mechanism for computer software existed in a clear and certain manner. The rights of software developers are quite extensive and parallel those on offer in the U.S. where the European Regime differs from that in the U.S. is the provision of very clear criteria concerning when software can be legally decompiled a "quasi-right", on the part of legal users which cannot be contracted out of it. Saying that the EU copyright system is not free from difficulties; ambiguities in the Directive make it unclear to what extent the reverse engineering exception is exhaustive and it is unclear if confidentiality obligations can arise which prohibits the decompilation of software, even if it is for the purpose of interoperability programming. Considering the development of devices and services to counteract protection restrictions placed on software by their authors. The EU, as at U.S. and international level, has recently adopted further legislation to protect software developers by requiring its member states to enact legislation outlaying the circumvention of technological protection devices in addition to outlaying trafficking in circumvention products and services. Unfortunately only the recital to the Copyright Directive recognize that right of lawful users to circumvent technological protection devices for the purposes of interoperability developing. It remains to be seen how it needs to be implemented in the member state implement this provision. Hence, both the U.S. and EU have provided broad protection to software owners, while promoting innovation in the field of software, however doubts remains with regard to restrictions on the ability to legally circumvent technological protection measures legal users may have a right such as fair use or in the event of interoperable programming to access such programs. The continuance of any such ambiguities cans only disincentive future investment. In India also allows the reverse engineering as a fair dealing under the Copyright Act for the purpose of interoperability. If any contracts made by the parties enforcing the reverse engineering it amounts to void. If part of the prohibiting reverse engineering is taken away by the parties it is valid one. If the law prohibits the reverse engineering then it leads to narrowing the IT industries and leads to protection given to the idea. The copyright Act not protects the idea it only protects the expression. If copyright law prohibits the reverse engineering then it becomes patent like protection. It leads to monopoly. Whenever the technology has come into existence, the law is an essential factor being needed to facilitate the advance technology. So in orderto balance the public and private interest copyright law should not prohibit the reverse engineering.

BIBLIOGRAPHY PRIMARY SOURCESSTATUTES

[1]. Indian Copyrights Act,1957
[2]. Copyrights Act, 1976, united states
[3]. Indian Patents Act ,2005 Amended
[4]. Patent and Cooperation Treaty 1970
[5]. The Patents Act ,1970
[6]. Indian Patent and Design Act, 1911
[7]. Indian Contract Act of 1972
[8]. Trade Secrets in Indian Contracts Act, 1872

SECONDARY SOURCES BOOKS & COMMENTRIES

[9]. Hancock, Terry (2008-08-29). "What if copyright didn't apply to binary executables?". Free SoftwareMagazine. Retrieved 2016-01-25.
[10]. Jump up to:[a] [b] Larry Troan (2005). "Open Source from a Proprietary
[11]. Perspective" (PDF). RedHatSummit 2006 Nashville. redhat.com. p. 10. Archived from theoriginal (PDF) on 2014-01-22. Retrieved 2015-12-29.
[12]. Pick a License, Any License on codinghorror by Jeff Atwood
[13]. github-finally-takes-open-source-licenses-seriously on infoworld.com by Simon Phipps (July 13, 2013)
[14]. Post open source software, licensing and GitHub on opensource.com by Richard Fontana (13 Aug 2013)
[15]. Validity of the Creative Commons Zero 1.0 Universal Public Domain Dedication and its usability for bibliographic metadata from the perspective of German Copyright Law by Dr. Till Kreutzer, attorney-at-law in Berlin, Germany
[16]. "The difference between ownership transfer (purchased) and licensing software". Allbusiness.com. Archived from the original on 22 May 2015.
[17]. "UMG v. Augusto". January 28, 2009.
[18]. "Court smacks Autodesk, affirms right to sell used software". Ars Technica. May 23, 2008.
[19]. "Vernor v. Autodesk". 2007-11-14.
[20]. Walker, John (2012-02-01). "Thought: Do We Own Our Steam Games?". Rock, Paper, Shotgun. Retrieved 2014-12-27. I asked gamer lawyer Jas Purewal about this a short while back, not specifically about Valve, and he explained that the matter is still unresolved. "In fact," he says, "it's never been completely resolved for software generally[...]"
[21]. Purewal, Jas. "The legality of second hand software sales in the EU".gamerlaw.co.uk.(mirror on gamasutra.com)
[22]. hg/mz (AFP, dpa) (2012-07-03). "Oracle loses court fight over software resale rules". dw.de.

[23].   Retrieved 2014-12-30. A European court has ruled that it's permissible to resell software licenses even if the package has been downloaded directly from the Internet. It sided with a German firm in its legal battle with US giant Oracle.

[24].   Voakes, Greg (2012-07-03). "European Courts Rule In Favor Of Consumers Reselling Downloaded Games". forbes.com. Retrieved 2014-12-30. Could this be the victory we need for a "gamer's bill of rights" ? DRM is an oft-cited acronym, and resonates negatively in the gaming community. The Court of Justice of the European Union ruled in favor of reselling downloaded games. Simply put, legally purchased and downloaded games will be treated like physical copies of the game, and consumers can then sell their 'used' game.

[25].   "JUDGMENT OF THE COURT (Grand Chamber)". InfoCuria – Case-law of the Court of Justice. 2012-07-03. Retrieved 2014-12-30. (Legal protection of computer programs — Marketing of used licenses for computer programs downloaded from the internet — Directive 2009/24/EC — Articles 4(2)and 5(1) — Exhaustion of the distribution right — Concept of lawful acquirer)

[26].   Timothy B. Lee (2012-07-03). "Top EU court upholds right to resell downloaded software". ArsTechnica.

[27].   "EU Court OKs Resale of Software Licenses". AP.

[28].   ecj-usedsoft-ruling

[29].   Directive 2009/24/EC of the European Parliament and the Council. Official Journal of the European Union Accessed on 14 March 2014.

[30].   Jump up to:**a b c** Scholten, Thomas. "Software Licensing". Retrieved 21 May 2012.

[31].   License list – Free Software Foundation

[32].   Open Source Licenses by Category on opensource.org

[33].   DFSGLicenses on debian.org

[34].   "The GNU General Public License v3.0 – GNU Project – Free Software Foundation (FSF)". fsf.org.Retrieved 24 March 2010.

[35].   Lawrence Rosen (2004-05-25). "Why the public domain isn't a license". rosenlaw.com. Retrieved 2016-02-22.

[36].   Placing documents into the public domain by Daniel J. Bernstein on cr.yp.to "Most rights can be voluntarily abandoned ("waived") by the owner of the rights. Legislators can go to extra effort to createrights that can't be abandoned, but usually they don't do this. In particular, you can voluntarily abandonyour United States copyrights: "It is well settled that rights gained under the Copyright Act may be abandoned. But abandonment of a right must be manifested by some overt act indicating an intention toabandon that right. See Hampton v. Paramount Pictures Corp., 279 F.2d 100, 104 (9th Cir.1960)."" (2004)

[37].   Lawrence Rosen (2012-03-08). "(License-review) (License-discuss) CC0 incompliant with OSD onpatents, (was: MXM compared to CC0)". opensource.org. Archived from the original on 2016-03-

[38].   12. The case you referenced in your email, Hampton v. Paramount Pictures, 279 F.2d 100 (9th Cir. Cal. 1960), stands for the proposition that, at least in the Ninth Circuit, a person can indeed abandon his copyrights (counter to what I wrote in my article) -- but it takes the equivalent of a manifest license to do so. :-)[...] For the record, I have already voted +1 to approve the CC0 public domain dedication and fallback license as OSD compliant. I admit that I have argued for years against the "public domain" as an open source license, but in retrospect, considering the minimal risk to developers and users relying on such software and the evident popularity of that "license", I changed my mind. One can't stand in the way of a fire hose of free public domain software, even if it doesn't come with a better FOSS license thatI trust more.

[39].   David Bainbridge, Intellectual Property 5th Edition (2002)

[40].   Patrick K. Bobko, Linux and General Public Licenses: Can Copyright Keep Open Source SoftwareFree?, 28 AIPLA QJ 81 (2000)

[41].   Patrick K. Bobko, Open-Source Software and the Demise of Copyright, 1 Rutgers Computer & Tech. LJ51 (2001)

[42].   Costello, S., Settlement nears in open source GPL suit, NetworkWorld Fusion News (2002) at

[43].   Hahn, R.W., Government Policy toward Open Source Software, Aei-Brookings Joint Center forRegulatory Studies

[44].   Ira V. Heffan, Copyleft: Licensing Collaborative Works in The Digital Age, 49 Stan. L. Rev. 1487 (July.1997)

[45].   Höppner, J. P., The GPL prevails: An analysis of the first-ever Court decision on the validity and effectivity of the GPL, 1:4 SCRIPT-ed 662 (2004) at

[46].   Hannu Järvinen, Legal Aspects of Open Source Licensing, University of Helsinki, Department ofComputer Science (2002)

[47].   Dennis M. Kennedy, A Primer on Open Source Licensing Legal Issues: Copyright, Copyleft, Copyfuture, 20 St. Louis U. Pub. L. Rev. 345 (2001), available at

[48].   Kennedy, G., New Codes and Protocols for Cyberspace: Current Issues in Internet Governance, C.T.L.R.2000, 6(8), 223-229

[49].   Mathias Klang, Free software and open source: the freedom debate and its consequences, First Monday(2005), at 52

[50].   Daehwon Koo, Patent and Copyright Protection of Computer Programs, 2 Intell. Prop. Qtrly. 188 (2002)

[51].   Paul B. Lambert, Shareware: Problems of Definition and Legal Nature After The Ozemail Decision, 22Eur. Intell. Prop. Rev. 595 (2000)

[52].   Paul B. Lambert, Copyleft, Copyright and Software IPRS: Is Contract Still King?, 11 Eur. Intell. Prop.Rev. 165 (2001)

[53].   Lawrence Lessig, The Future of Ideas, (2002)

[54].   David McGowan, Legal Implications of Open-Source Software, 2001 U. Ill. L. Rev. 241 (2001)

[55].   Robert P. Merges, The End of Friction? Property Rights and Contract in the 'Newtonian' World of On-Line Commerce, 12 Berkeley Tech. LJ 115 (1997)

[56].   Axel Metzger , Free Content Licenses under German Law, talk given at the Wissenschaftskolleg, Berlin,June 17, 2004, at

[57].   Eben Moglen, Enforcing the GNU GPL, at

[58].   Maureen O'Sullivan, Making Copyright Ambidextrous: An Expose of Copyleft, 2 J.I.L & Tech. (2002)at

[59].   Daniel B. Ravicher, Facilitating Collaborative Software Development: The Enforceability of Mass- Market Public Software Licenses, 5 Va. J.L. & Tech. 11 (2000)

[60].   Eric S. Raymond, The Cathedral and the Bazaar, (1999)

[61].   Andrew M. St. Laurent, Understanding Open Source and Free Software Licensing, (2004)

[62].   Richard Stallman et al., The GNU Operating System and the Free Software Movement Open Sources:Voices from the Open Source Revolution, (1999)

[63].   Mikko Välimäki, The Rise of Open Source Licensing: A Challenge to the Use of Intellectual Property in the Software Industry (2005) 53

[64].   Henning Wiese, The Justification of the Copyright System in the Digital Age, 24 Eur. Intell. Prop. Rev.387 (2002)

[65].   Anderson, R. (2004). Buying and contracting for resources and services. New York: Neal-SchumanPublishers. Unlike other books, this volume focuses not on content or contract negotiations, but the equally important issue of vendor relations. Included is information on issuing requests for proposal (RFPs), vetting vendors among a group that carries similar information, and tracking vendor performance.

[66]. Bielefield, Arlene and Lawrence Cheeseman. Interpreting and Negotiating Licensing Agreements: A Guidebook for the Library, Research, and Teaching Professions. New York: Neal-Schuman Publishers,1999.
[67]. Durrant, F. (2006). Negotiating licenses for digital resources. New York: Neal-Schuman Publishers. One of the most recent books on electronic content purchasing, this volume focuses on issues in the European Union markets, but its emphasis on contract negotiations make it unique from previous books that cover similar territory.
[68]. Epstein, Michael A. and Frank L. Politano. Drafting License Agreements. 3rd ed., (looseleaf), NY:Aspen Law & Business, 1997.
[69]. Halvey, John K. Computer Law and Related Transactions. Charlottesville, VA: Michie Company. 1994.
[70]. Harris, L. E. (2002). Licensing digital content: A practical guide for librarians. Chicago: ALA Editions.
[71]. Megantz, Robert C. How to License Technology. New York : John Wiley & Sons, 1996.
[72]. Milgram, Roger M. Milgram on Licensing. 2 vols., (looseleaf current updates), New York: MatthewBender, 1990.
[73]. Ubell, Robert. Draft negotiating networked information contracts and licenses. New York: Robert UbellAssociates, 1994. 75 p.

WEBSITES
[74]. https://www.nasscom.in/knowledge-center/publications/strategic-review-it-bpm-sector-india-2019-   decoding-digital#:~:text=This%20report%20has%20an%20in,used%20to%20measure%20digital%20success
[75]. https://www.ibef.org/pages/24623
[76]. https://www.ibef.org/pages/24623
[77]. http://nopr.niscair.res.in/bitstream/123456789/14456/1/JIPR%2017(4)%20284-295.pdf
[78]. http://liblicense.crl.edu/resources/bibliography/
[79]. https://journals.plos.org/ploscompbiol/article?id=10.1371/journal.pcbi.1002598
[80]. https://blog.ipleaders.in/software-license-agreements-india/
[81]. https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.837.888&rep=rep1&type=pdf
[82]. https://law.au.dk/fileadmin/Jura/dokumenter/forskning/rettid/Afh_2019/afh6-2019.pdf
[83]. https://repository.jmls.edu/cgi/viewcontent.cgi?article=1395&context=jitpl 11. https://dl.acm.org/doi/10.5555/1014911
[84]. https://www.synopsys.com/blogs/software-security/5-types-of-software-licenses-you-need-to- understand/
[85]. https://snyk.io/learn/what-is-a-software-license/
[86]. https://www.10duke.com/software-licensing-models/
[87]. https://opensource.org/licenses
[88]. https://www.cherwell.com/software-asset-management/library/blog/software-license-types/
[89]. https://www.whitesourcesoftware.com/resources/blog/open-source-licenses-explained/
[90]. https://searchcio.techtarget.com/definition/software-license
[91]. https://www.upcounsel.com/software-license-types
[92]. https://searchcio.techtarget.com/definition/software-license#:~:text=A%20software%20license%20is%20a,the%20software%20without%20violating%20co pyrights.