Journal of Intellectual Property Rights
Vol 25, November 2020, pp 180-185

Software Interoperability and Competition Law

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Received: 13th May 2020; accepted: 25th October2020

Interoperability is of prominent role in the software industry, since the value of a software product largely depends on the extent to which it can be used together with systems that consumers already have. Interoperability in the computer industry is a big deal and the lack of interoperability even more so. Recently interoperability has materialized as a crucial policy and legal consideration in cases concerning competition laws in the software sector. In this article, author analyses the role of competition law in enforcing software interoperability from the intellectual property perspective focusing on the abuse of dominant position.

Keywords: Software Interoperability, Abuse of Dominance, Copyright Abuse, FRAND Terms, World Trade Organisation, Agreement on Trade Related Aspects of Intellectual Property Rights, WIPO Copyright Treaty, Berne Convention, Software Copyright Derivative, The Competition Act, 2002

The usefulness of complex products and services often depend on the interoperability of components and products of different firms.[1] To enhance the value of these complex products, competing manufacturers, customers and suppliers – participate in standard – setting practices to set technological standards for use in designing products or services, where the IPR holder to license technologies on fair, reasonable and non-discriminatory (FRAND) terms.[2] Of late interoperability has emerged as a key policy and legal consideration[3] in cases concerning competition laws in the technology transfer sector. Interoperability may be defined as *the ability to exchange information and mutually to use the information which has been exchanged.*[4] In other words, it is the ability of two or more software components to cooperate despite differences in language, interface, and execution platform.[5]

Interoperability is of vital importance in the software industry, since the value of a software product largely depends on the extent to which it can be used together with systems that consumers already have.[6] Whereas, most people unconsciously rely on interoperability between computer programs daily, many people recall instances of unreadable email attachments, presentations that failed to display or word documents that were delivered by the printer in an unreadable form. In such instances, it might have crossed the minds of frustrated computer user that the lack of interoperability was perhaps deliberate and that whoever caused it probably sought to persuade the user to switch to a different vendor or to upgrade to a new version – both of which typically come at a price.[7]

Both the abuse of dominance regime and merger control offer possibilities to enforce interoperability under competition law.[6] There has been a series of legal battles between companies that create complementary technologies that enable interoperability and those that use the technologies in their products.[8] Since the range of circumstances to engage in monopolistic and anti-competitive behaviour are numerous in this sector, the influence of competition law is increasingly prominent in the software industry. In this article, author analyses the role of competition law in enforcing software interoperability from the intellectual property perspective focusing on the abuse of dominant position.

Interoperability

Interoperability refers to the ability of a system or components thereof to function effectively together by providing or accepting services from other systems. It is the ability to transfer and render useful data and other information across systems, applications or components.[9] Interoperability facilitates competition among rival enterprises and

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thereby increases the consumer choices. Since, interoperability encourage competition, it will attract the provisions of competition law. Cases involving interoperability have also proved difficult to handle in various competition jurisdictions. A well-known example is the *Microsoft case*[10], where the Commission based the order to license on the need for interoperability, the risk of elimination of competition on the secondary market, the ill effects on innovation, the harm to consumers and the absence of jurisdiction.[11] In other competition cases[12] involving intellectual property and interoperability, it can actually be established that the cases were successfully prosecuted based on the argument of dominance or monopoly. Commission in *Consumer Online Foundation* v *Tata Sky Ltd. & Ors.*[13], observed that, although a monopoly would be the basis, central to the ruling would be the need to promote competition through sharing facilities; a principle which is still true in the Indian scenario despite the absence of a dominant firm. These cases highlights the fact that, the need to promote competition is central in all cases.[14]

Software and Intellectual Property Rights

A computer cannot operate without commands. These commands are generally known as programs or software, which may be incorporated in the computer. A software is a series of coded instructions that are intended to bring about a particular result when used in a computer. The software industry is a knowledge intensive industry whose output is information, the coded instructions that guide the operations of a computer or a network of computers. Both the inputs and much of the outputs in this industry consist of intangibles and the rewards to the innovators in said industry are extra ordinary to control the personal fortune in the world.[15] The rise of software as a major industry is one such new challenge. An economic approach to the protection of software adds to the already extensive legal analysis.[16] As such, it is hardly astounding that, the legal framework establishing and regulating proprietorship of such intangibles has attracted substantial consideration and debate.

Choice between Patent and Copyright

Differences between the software industries of the 21st century as compared to that of the 20th century have demanded the prime significance of formal protection of software through some forms of intellectual property. Although, the software industry is spread across the world, the substantial dissimilarities remain among said industry and its associated intellectual properties in its relevant market.[17] When we look for an appropriate intellectual property, which can protect a software, we have to choose between *patents* and *copyright.* Patents and copyright altogether provides different kinds of protection. Patent is an exclusive right granted to the inventor for inventing a product or a process which offers a novel technical solution to a problem. On the other side, copyright protects only expressions and not the ideas. In general, a software does not have any technical effect so that, the same can be protected under the copyright law. However, a software needs to be original and sufficient effort and skill must be put into impart its originality.

The law in most of the jurisdictions are very clear in connection with the protection of software. Especially, after World Trade Organisation (WTO) enlarged the scope of copyright by including software under its umbrella by through the Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS). Such an expansion was in response to the challenges posed by the latest development in the software industry. Accordingly, Article 10 of the TRIPS Agreement states that, software, whether in source code or object code, shall be protected as literary works under the Berne Convention. Similar mandate is also provided under Article 4 of the WIPO Copyright Treaty (WCT).[18] In India, the Copyright Act, 1957 protects the interest of an author in a copyrighted work in compliance with Section 14 and 57 respectively, which includes the right of an author in a computer program or a software.

Similarly, the Software Copyright Derivative[19] recognises software as a literary work protected by copyright. Further, the UK Copyright, Designs and Patents Act, 1988[20] defined the term “literary work” as including a computer program, and a database. Nevertheless, the issue arises with the strict categorisation of software as literary work because software has other elements, which may not be a subject matter of copyright protection. The code, which is used to write software, have certain functions, which are independent of the grammatical construction of the lines of such code. Thus, we can say that, the software is not merely a literary expression. For example, there may be two different

softwares, where the source of both of them is completely different to each other may still have very same functions and may even achieve identical outcome. This is the basis of the idea/expression dichotomy that is frequently debated. *Apple Computer Inc.,* v *Franklin Computer Corp*[21], is one of the landmark case connected to the software copyright, where the federal court held that, *Apple's* precise code was protected by its copyright. Historically, a major distinction in the copyright law was that, *ideas cannot be protected; only expressions are.*[22] Implementing any claims based on an abstract idea on a computer program or software cannot transform such abstract idea into a patentable subject matter.[23] However, computer related inventions are excluded from the scope of patentability. On the other side, considering computers and software are clearly functional items which can be related to science and technology and hence an industry property. Thus, it could be argued that, software can even be protected under patent law, provided it fulfils the *three basic requirements*[24] for patentability.

Novelty is not often an issue because protection is mainly sought for new bits of software. In that case, the major challenge is to identify the inventive step or the lack of it. However, most of the software evolved by means of incremental changes and improvements. As a result, the challenge of identifying the inventive step leaves a significant segment of the software industry without a patent protection. Similarly, patents are associated with technical and practical problems. Hence, the inventions, which are eligible for patent protection arguably, produce a technical result. This has led some countries to exclude software from the list of patentable subject matter unless the software related invention produces a technical result. Software on its own, *as such* is therefore in the excluded list of patentable subject matter. As a result, a patent cannot be granted for any software alone irrespective of the contents of such software. Thus, the inventions must be a computer related invention rather than mere software.

The UK Patents Act, 1977 explicitly excludes computer programs; they are only excluded "*as such*". In *Burroughs Application,*[25] the Patent Court held that claims for "*a method of transmitting data*", a "*method of operating or programming a computer*", a "*method for controlling a system of computers*", or the like should be accepted if the claims are clearly directed to a method involving the use of apparatus programmed to operate in a novel manner. Claims are patentable if they cover a computer in combination with or controlled by a computer program or a method of operating a computer according to a computer program.[26] Such a computer is a different apparatus from the same computer under the operation of another computer program. What is patentable is what the controlled computer is doing: What process is being carried out?[27] The Court of Appeal in *Genentech Inc.'s Patent*[28] stated that a patent for a computer when programmed or for the disk containing a program is no more than a patent for the program as such. You cannot protect a computer program when it is merely stored on a magnetic medium or loaded onto a computer.[26] This reasoning was extended to included programs stored in ROM.

In *Gale's Application,*[29] the Court of Appeal held that claims to a novel computer program stored on a ROM are not patentable in the U.K. It was not a technical process, which existed outside the computer, nor did the program solve a technical problem lying within the computer or define a new way of operating the computer in a technical sense. Computer programming is not "*technical*" in the legal sense in that advances in the art of computer programming do not provide the technical advance required for patentability. If this were not so, a computer program containing such an advance would be patentable and the Act specifically excludes programs as such from patentability. This is exemplified in *Hitachi Ltd.'s Application,*[30] in which the UK Patent Office refused an application related to a compiler program. Whatever the technical advance may be is simply the production of a trading system. It is a data processing system for doing a specific business. A data processing system operating to produce a novel technical result would normally be patentable. However, it cannot be patentable if the result itself is a prohibited one.[31]

As long as a technical effect is produced and a technical problem is solved showing technical outcome, the exclusion of a computer program as such no longer applies and the invention might be patentable.[32] Hence, the focus is placed on what the claimed invention achieves, rather than on the manner in which it achieves. Patent law is a strong contender, not only because of its industrial nature that fits in well with software, but also because of its strong level of protection. But with these come strict requirements for patentability which many pieces of software

cannot meet. However, copyright can offer an effective intellectual property regime of protection for software. All forms of software expression can be protected as literary works in copyright, even if the concepts of originality and idea/expression do not fit seamlessly. More importantly, whilst literal infringement looks rather straightforward, it has taken the courts a while to work out in detail how to deal with non-literal infringement. There are also software specific exceptions, such as reverse engineering. These are based on standard industry practice and that practice is imported into copyright.

Software Interoperability and Abuse of Dominance

The first competition case concerning interoperability dates back to 1980 when the Commission started an antitrust investigation into IBM's behaviour in the market for the supply of central processing units and operating systems for its most powerful range of computers, the System/370. During the proceedings, the Commission had alleged that IBM abused its dominant position in this market by failing to provide other manufacturers with timely technical information needed to allow their products to be used with System/370.[33] In August 1984, the Commission accepted the unilateral undertaking that IBM offered relating to the provision of interoperability information to competitors. Since the undertaking established a settlement between IBM and the Commission, it did not offer any guidance to the industry approximately the circumstances in which a refusal to license interoperability records would constitute abuse of dominance.

By virtue of Section 3(5)(i) of the Competition Act, 2002, nothing in Section 3 of the Act shall restrict the right of any person to restrain any infringement of, or to impose reasonable conditions, as may be necessary for protecting their intellectual property rights. Therefore, parties who are intellectual property right holders and are parties to agreements can take intellectual property defense, provided the agreements impose reasonable conditions as may be necessary for protection of intellectual property rights. However, in *Shamsher Kataria Case,*[34] the Commission held that protection under Section 3(5) of the Act is available only if *"necessary"*. License agreement imposing disclosure requirements namely; a) disclosure to licensor from time to time the relevant activities relating to licensed software; b) what value added software it has created; c) what licensee intends to create using the licensed software was held to be violative of Section 4(2)(a)(i) of the Act, 2002.[35]

Similarly, interoperability plays a role in the enforcement of European competition law in two ways. In the framework of merger control, the European Commission may adopt commitments offered by undertakings with a view to rendering a concentration compatible with the common market. In addition, a refusal to give competitors access to interoperability information may constitute abuse of dominance.[36] The European Commission while assessing the possibility for Microsoft to degrade Skype's interoperability with competing operating systems and Windows' interoperability with competing providers of communications services in both the market for consumer and enterprise communications. The Commission found that Microsoft did not have incentives to degrade interoperability and concluded that the concentration did not raise any serious doubts as to the compatibility with the internal market.[37]

However, while assessing a software interoperability or interchangeability, the relevant market could not be segmented variant-wise unless it was established that different variants had such distinct characteristic so as to be viewed as a distinct product by the customers – the only test that had been enshrined in the Act was substitutability/interchangeability from demand perspective.[38] Dissenting judgment in *Microsoft case*[39] held that, blocking of interoperability with other operating systems can be considered as abuse of its dominance as prohibited under the Act. It is further observed that, discriminatory pricing which is likely to attract an infringement of the Act. In a software industry, if an enterprise has an increased incentive to strategically restrict interoperability in the absence of appropriate remedies, thereby raising barriers to entry, then it could be considered as dominant.[40]

Commission in *Matrimony.com Limited and Ors.* v *Google LLC and Ors.*[41] held that the prohibitions imposed under the negotiated search agreements are evidently unfair and they restrict the choice of the partners and prevent them from using the search services provided by competing search engines. Thus, Google's requirement to all advertisers to sign up for the AdWords terms and conditions, which restrict advertising platform interoperability, making it prohibitively expensive for advertisers to use competing platforms along with Google's AdWords program, amounts to a violation of Section 4(2)(a)(i)

of the Act. The Commission while considering the plea on whether DTH service providers had colluded to prevent interoperability of their smart cards in their Set Top Boxes, observed that *for any "practice" to be considered as concerted action, the facts must be counterpoised on that fulcrum of "by agreement amongst themselves. Such "agreement" should not be adduced, assumed or arrived at through eliminative or wishful reasoning but must be concluded through amassment of undisputable evidences. The establishing of joint mensrea of non-competition is imperative.*[42]

Similarly, EC in the *Microsoft*[43] case held that, Microsoft's refusal to license technical information that work group server operating systems need to interoperate with Microsoft's PC operating system Windows constituted an abuse of a dominant position in violation of Article 102 of TFEU. It is now well established that, refusal of a dominant undertaking 'to give access to a product or service indispensable for carrying on a particular business to be treated as abusive, it is sufficient that three cumulative conditions be satisfied, namely, that that refusal is preventing the emergence of a new product for which there is a potential consumer demand, that it is unjustified and such as to exclude any competition on a secondary market.[44] However, the holder of such property can legitimately refuse to license its technology to rivals.[45] Abuse of dominance regime offers various possibilities to enforce interoperability under the competition law. Unlike in merger control regime, when a dominant firm has already refused to license its interoperability information, competitors can only rely on *ex post* competition enforcement. That the fulfilment of the four conditions as held in *IMS Health* is sufficient for a refusal to license to be held abusive.

Conclusion

Software interoperability information is crucial in bridging connections among the parts of a program to applications and to its end users. A given technology seldom operates in isolation from other technologies; interoperability is required in order to create the intended value. This is a well-recognized relationship, but it recently has become more intense, dynamic and uncertain, due to the arrival of sophisticated information technology and greater availability of platform technologies.[46] Compatibility or interoperability is typically manifested in the form of a standardized interface between components of a larger system. An effective interface standard does not affect the design of the components themselves, such as numerically controlled machine tools or the components of these tools, including controllers.[47] Survival of the entire platform depends on complementarity of the offering, which in turn depends on technology, features and interoperability.[48] However, the scope of copyright protection and the refusal to license or to disclose the interoperability information have convinced authorities and courts to grant a duty to disclose. Although the compulsory disclosure of software interoperability information is alleged to have certain benefits, it harms the copyright holder and, as a competition remedy, helps secondary market players at the expense of primary market players.[49]

References

1 *In Re M/s Best IT World (India) Private Limited (iBall)*, Case No: 04/2015 (CCI).
2 *In Re: Intex Technologies (India) Limited*, Case No: 76/2013 (CCI); *Telefonaktiebolaget LM Ericson (PUBL)* v *CCI*, (2016) SCC Online (Del) 1951.
3 Song S, Competition law and interoperability in cloud computing, *Computer law & Security Review*, 33 (5)(2017) 659-671.
4 McKean, Software Directive, 2005, §10.
5 Wegner P, Interoperability, In *ACM computing surveys*, 1996.
6 Graef I, How can software interoperability be achieved under European Competition Law and related Regimes? *Journal of European Competition Law & Practice*, 5(1) (2014) 6-19.
7 Van Rooijen A, The software interface between copyright and competition law: A legal analysis of interoperability in computer programs, *Kluwer Law International BV,* (2010) 8.
8 Dedrick J & Kraemer K L, Intangible assets and value capture in global value chains: The smartphone industry, *WIPO,* 41 (2017) 35.
9 Palfrey J & Gasser U, Interop: The promise and perils of highly interconnected systems, *Basic Books,*(2012) 5.
10 *Microsoft Corp* v *Commission,* (2007) T-201/04.
11 Hansen H, Intellectual property law and policy, *Bloomsbury Publishing,* 10 (2013) 294.
12 Case M.8788 - *Apple / Shazam.* [2018](EU).
13 Case no. 2/2009. (CCI).
14 Mehta S Pradeep, An abuse of dominance, *Financial Express,* 2011.
15 Graham S J & Mowery D C, Intellectual property protection in the US software industry, *Patents in the Knowledge-based Economy*, (2003) 219, 231.
16 Dam K W, Some economic considerations in the intellectual property protection of software, *The Journal of Legal Studies*, 24 (2) (1995) 321-377.
17 Relevant market means a market in which a particular product or service is sold. i.e., a market comprises all

those products and/or services, which are regarded as interchangeable or substitutable by the consumer because of the products' characteristics, their prices and their intended use.

18 Where a software shall be protected as literary work within the meaning of Article 2 of the Berne Convention.

19 91/250/EEC.

20 Section 3 (1) (b).

21 714 F.2d 1240 (3rd Cir. 1983).

22 *Baker* v *Selden,* 101 US 99 (1879).

23 Warrier S Vishnu, Implementing a claim drawn to an abstract idea through a Software is a patentable? *Intellectual Property Primer,* 2017, http://www. intellectualpropertyprimer.com/ patentability-abstract-idea.html (accessed on 24 October 2020).

24 Novelty, non-obviousness and usefulness.

25 [1974] RPC 147.

26 Newton J, Software Patents in the United Kingdom, *Communications Law,* 1(5) (1996) 202.

27 Fujitsu Limited's Application [1996] R.P.C. 511 (Laddie J.).

28 [1989] RPC 147.

29 [1991] R.P.C. 305 (C.A.).

30 [1991] RPC 415.

31 *Merrill Lynch's Application* [1989] RPC 561 at 569.

32 *Vicom Systems Inc.* [1987] 2 EPOR 74.

33 Commission of the European Communities (1985), *Fourteenth Report on Competition Policy*, 77-79.

34 *Shamsher Kataria* v *Honda Siel Cars India Ltd*. 2014 SCC OnLine CCI 95.

35 *Atos Worldline India Pvt. Limited* v *VeriFone India Sales Pvt. Ltd.,* 2015 CompLR 327 (CCI). *Three D Integrated Solutions Ltd.* v *VeriFone India Sales Pvt. Ltd.* CompLR 464 (CCI).

36 Article 102, Treaty on the Functioning of the European Union (TFEU).

37 COMP/M.6281 - *Microsoft/Skype* [2011] (EU).

38 *Sonam Sharma* v *Apple Inc. USA*. 2013 CompLR 346 (CCI).

39 *Singhania and Partners LLP* v *Microsoft Corporation (I) Pvt. Ltd. and Embee Software Pvt. Ltd.* 2011 CompLR 481 (CCI).

40 COMP/M.5669 - *Cisco/Tandberg* [2010] (EU).

41 2018 CompLR 101 (CCI).

42 Case no. 2/2009. (CCI).

43 COMP/C-3/37.792 *Microsoft* [2004] OJ L32/23.

44 *IMS Health GmbH & Co. OHG* v *NDC Health GmbH & Co. KG* [2004] ECR I-05039.

45 *AB Volvo* v *Erik Veng (UK) Ltd*. 1988 E.C.R. 6211.

46 Baden-Fuller C & Haefliger S, Business models and technological innovation, *Long Range Planning*, 46 (6) (2013) 419-426.

47 Tassey G, Standardization in technology-based markets, *Research Policy*, 29 (4-5) (2000) 587-602.

48 Eisenmann T, Parker G & Van Alstyne M, Platform envelopment, *Strategic Management Journal*, 32 (12) (2011) 1270-1285.

49 Yu Q, Software interoperability information disclosure and competition law, *European Competition Law Review*, 35 (5) (2014) 235-252.