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The concept of interoperability in
European Union law – An analysis in
competition law and intellectual
property law

JAEM01 Master Thesis

European Business Law
15 higher education credits

Supervisor: Prof. Dr. Xavier Grousot

Term: Spring 2013

ABSTRACT/SUMMARY

The technology industry and even open source projects are heavily based on intellectual property rights, such as the copyright protection for software. In a rapidly changing technological and legal landscape, it can be difficult to find a proper balance between the enforcement of software copyright and alternative considerations such as safeguarding interoperability. This is illustrated by presenting and analysing cases from competition law and copyright law, with a focus on the abuse of a dominant position under Article 102 and the scope of protection of software under Directive 91/250. On this legal basis and supported by economic literature, the current situation and its development is presented, where market conditions that favour monopolies and inherent network-effects can present a challenge for interoperability, a concept that is instrumental for a functioning technological landscape, especially for Free and Open Source Software. While there are already some safeguards in place with regard to Directive 91/250 as is shown by such cases as SAS or BSA, these leave a considerable degree of legal uncertainty. As such, especially with regard to the Commission's plan to potentially legislate in this area based on Article 118 TFEU as part of Agenda 2020 and the initiative for a single digital market, the concept of interoperability information should be safeguarded and recognized more expressly.

ACRONYMS / ABBREVIATIONS

| | |
|------------|---|
| EU | European Union |
| EC | European Commission |
| CJEU | Court of Justice of the European Union |
| DG Comp | Directorate General Competition of the EU Commission |
| DG Connect | Directorate General for the Digital Agenda of the EU Commission |
| CFI | Court of First Instance |
| GC | General Court |
| TRIPS | Agreement on Trade-Related Aspects of Intellectual Property Rights |
| WIPO | World Intellectual Property Organization |
| FOSS | Free and Open Source Software |
| FLOSS | Free, Libre and Open Source Software |
| FSFE | Free Software Foundation Europe |
| GNU | GNU is not Unix |
| GPL | General Public License |

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The concept of interoperability in European Union law – *An analysis in competition law and intellectual property law* (Business as usual or a never-ending story in need of new regulation?)

“The Commission should not need to run an epic antitrust case every time software lacks interoperability. Wouldn't it be nice to solve all such problems in one go?”

-- Neelie Kroes, European Commission Vice-President for the Digital Agenda¹

§1. Introduction

This paper examines the concept of interoperability with regard to the competitive disadvantages, which software producers, specifically providers of free and open source software have to face when they need to ensure interoperability with an important or even dominant product to be competitive in the marketplace and a viable alternative for consumers. Instead of only examining this within the strict boundaries of competition law, the present examination explicitly includes the concept of interoperability as established in copyright case law and examines the role of standards as far as possible.

1.1. Why is it relevant?

Today there is a considerable market of products and services in the area of Free and Open Source software, in some areas with significant market share.² As such, competition concerns in or on this market are important for the single (digital) market and interoperability is of particular importance for Free and Open Source Software.³

¹ European Commission, ‘Neelie Kroes Address at Open Forum Europe 2010 Summit: Openness at the heart of the EU Digital Agenda’ (2010) accessed 21 May 2013.

² Marketshares and acceptance: Richard Kemp, ‘Current Developments in Open Source Software’ (2009) 25 Computer Law & Security Review 569. p. 570;

³ Christian Hicks and Dessislava Pachamano, ‘Back-propagation of user innovations: The open source compatibility edge’ (2007) 50 Business Horizons 315 accessed 29 September 2012. p. 316.

Interoperability can be a key to healthy competition on a functioning software market, as this market has the potential for tremendous lock-in effects.⁴ This was the case in the past as the well-known cases in relation to Microsoft (T-201/04) and T-167/08 have shown.⁵ Even when just looking at Microsoft, though they are not as brazen as in the past, similar issues with potential competition concerns exist today, for example regarding secure boot.⁶ As a result, especially regarding the growing importance of the digital market, this is very much a current issue that should be considered, especially in light of the Commission's push for a single digital market.⁷ Free and Open Source software has been at the forefront of a 'single market' for software, always improving through continuous iteration and providing continuous innovation independent of proprietary product cycles, whether mainly developed in a community driven project or by a company.

1.1. Table of Content

The structure of the present analysis will start by presenting relevant background information and definitions that are important for the rest of the essay in part §2. There, software and free and open source software are defined as they are used within this document. Then, part §3 examines the various faces of interoperability, as defined by competition law, copyright law and when taking into account different kinds of standards. After that, in §4, the qualitative case law analysis is conducted using signature cases according to the criteria established above. During §5, the literature review is conducted. In §6, the analysis that came before is supplemented by economic data that evaluates the economic cost of lock-in or lack of interoperability. Finally, in §7 a normative view is outlined on the possible

⁴ Lock-in effects describe the effect or fear of an effect that would 'lock' an individual or an entity to a particular product, vendor or service because it could not choose another without significant costs that arise of the incompatibility of the current product vendor or service with potential alternatives.

⁵ Chapter 4.2;

⁶ Chapter. 4.5;

⁷ Communication regarding A Digital Agenda for Europe 26 August 2010, COM(2010) 245 final/2 (European Commission). p. 14; Pursuant to the schedule therein and the E-Mail in Appendix A, a staff working document should be forthcoming.

future development of the concept of interoperability in European Union law and in §8 a conclusion is drawn.

1.2. Scope

To define a broader concept of interoperability that covers more than one strictly defined discipline, the concept of interoperability will be examined in the areas of European Union Competition Law and Intellectual Property Law, most importantly the relevant statutes and case law, but also through existing scholarship. Furthermore the issue of (dominant) standards as far as they pertain to the areas under examination and the concept of interoperability will be examined. Reference to case law or legal provisions of member states of the European Union will be made, where this is necessary to describe a case or legislation at the level of the European Union. The territorial scope will be restricted to the geographic area of the European Union.

1.3. Case Selection

If past cases are taken as an example, most interoperability issues because of dominant software firms have taken place at the EU level, or were referred to the European Union. Additionally, it should be distinguished between the European Union level and the ‘International Intellectual Property Regime’, as intellectual property rights are moving slowly but surely to regulation at the European Union level instead of being regulated by each individual member state, especially with regard to the establishment of a single digital market within the European Union.⁸ This is even more so since the establishment of Article 118 TFEU, which now allows for harmonization in this area. Thus, the focus will be on the European Union level. Due to its general importance in intellectual property matters, reference will be made to the US system and its litigation where appropriate.

⁸ *ibid.*

Furthermore, cases will be selected from the area of competition law, the area of intellectual property law and the field of regulation surrounding technical standards. Regarding standards it will be distinguished between proprietary, open, and quasi-standards.

In the area of competition law, the main focus will be on case T-201/04 (Microsoft, Workgroup Servers) and its recent conclusion regarding the fine in T-167/08.⁹

Regarding the area of copyright law, Case C-406/10 SAS Institute v World Programming Ltd. will be examined, with references to the referring and the concluding case at the English High Court where appropriate.¹⁰

For the literature review, a host of literature was selected that explores the relation between proprietary and free and open source software using economic and socio-legal means. Most important in this regard due to the economic nature of competition and intellectual property law is the work by Elkin-Koren, Bitzer, Goode, Lanzi, Lin and Hicks.¹¹

This is then complemented by literature about free and open source software in a general legal context such as the excellent handbook by Jaeger/Metzger and reference to the work of Guibault and van Daalen about Open Source Licenses from a Dutch and European Law perspective as well as shorter

⁹ Commission Decision relating to a proceeding under Article 82 of the EC Treaty (Case COMP/C-3/37.792 Microsoft) 24 March 2004 (Commission of the European Communities).; *Microsoft v Commission* [2007] T-204/01, [2007] II-03601 (Court of First Instance).; *Microsoft v Commission* [2012] T-167/08, [2012] nyp. (Court of First Instance).

¹⁰ *SAS Institute Inc. v World Programming Ltd.* (2012) C-406/10 nyp. (Court of Justice of the European Union).; *SAS Institute Inc v World Programming Ltd.* [2010] EWHC 1829, [2010] (High Court, Chancery Division).; *SAS Institute Inc v World Programming Ltd* [2013] EWHC 69, [2013] (High Court, Chancery Division).

¹¹ Niva Elkin-Koren and Eli M Salzberger, *The law and economics of intellectual property in the digital age: The limits of analysis* (Routledge research in intellectual property vol 5, Routledge 2013).; Jürgen Bitzer, 'Commercial versus open source software: the role of product heterogeneity in competition' (2004) 28 *Economic Systems* 369 accessed 29 September 2012.; Sigi Goode, 'Something for nothing: management rejection of open source software in Australia's top firms' (2005) 42 *Information & Management* 669 <http://ac.els-cdn.com/S0378720604000783/1-s2.0-S0378720604000783-main.pdf?_tid=8ca06f96-0a34-11e2-abb8-00000aacb35f&acdnat=1348923338_875933f5cb8e30ea1a22cfdc2e53069d> accessed 29 September 2012.; Diego Lanzi, 'Competition and open source with perfect software compatibility' (2009) 21 *Information Economics and Policy* 192 accessed 29 September 2012.; Lihui Lin, 'Impact of user skills and network effects on the competition between open source and proprietary software' (2008) 7 *Electronic Commerce Research and Applications* 68 accessed 29 September 2012.; Hicks and Pachamanova (n 3).

essays about the topic by Kemp and Henley.¹² Where relevant, during the analysis or the examination of the case law, relevant commentary and doctrine will be referenced such as essays about the cases by Komninos & Czapracka, Glorioso, Kühn, Hoehn, Barazza and Kalmo¹³ as well as legislative commentary by Vinje.¹⁴

1.4. Method

First, a qualitative case law analysis with signature cases in the areas of competition law (abuse of a dominant position to the disadvantage of interoperability), the area of copyright (use of copyright to defeat interoperability) is conducted.

Secondly, a review of commentary and economic literature is conducted to solidify the case law analysis in this paper and to supplement the analysis conducted with the scholarship of past and present researchers.¹⁵ When examining the economic literature special emphasis is put on economic data

¹² Till Jaeger and Axel Metzger, *Open Source Software: Rechtliche Rahmenbedingungen der freien Software* (3rd edn, Beck 2011).; Lucie Guibault and Ot van Daalen, *Unravelling the myth around open source licenses: An analysis from a dutch and european law perspective* (TMC Asser Press 2005).; Kemp (n 2).; Mark Henley and Richard Kemp, 'Open Source Software: An introduction' (2008) 24 *Computer Law & Security Report* 77 accessed 29 September 2012.

¹³ Assimakis P Komninos and Katarzyna A Czapracka, 'IP Rights in the EU Microsoft Saga' in Etro Federico and Ioannis Kokkoris (eds), *Competition law and the enforcement of article 102* (Oxford Univ. Press 2010).; Andrea Glorioso, 'An interoperable world: the European Commission vs Microsoft Corporation and the value of open interfaces' (2005) <<http://www.bileta.ac.uk/content/files/conference%20papers/2005/An%20Interoperable%20World%20-%20the%20European%20Commission%20vs%20Microsoft%20Corporation%20and%20the%20Value%20of%20Open%20Interfaces.pdf>> accessed 4 May 2013.; Kai-Uwe Kühn and John van Reenen, 'Interoperability and Market Foreclosure in the European Microsoft Case' in B. Lyons (ed), *Cases in European Competition Policy: The Economic Analysis* (Cambridge University Press 2007).; Thomas Hoehn and Alex Lewis, 'Interoperability remedies and innovation: a review of recent case law' (12 March 2012) accessed 22 March 2013.; Stefano Barazza, 'Commission v Microsoft: How to Set Reasonable Rates for Access to Interoperability Information and Evaluate their Innovative Character?' (2013) 4 *Journal of European Competition Law & Practice* 52 accessed 22 March 2013.; Hent Kalmo and Alessandro Scopelliti, 'Microsoft Europe Case: The Refusal to supply interoperability' (Catania 6 July 2009) accessed 24 March 2013.

¹⁴ Thomas C Vinje, 'Die EG-Richtlinie zum Schutz von Computerprogrammen und die Frage der Interoperabilität' (1992) 1992 *Zeitschrift der Deutschen Gesellschaft für Gewerblichen Rechtsschutz und Urheberrecht (GRUR Int)* 250 accessed 4 May 2013.

¹⁵ For the literature selected, see above.

pertaining to the costs of switching (sunk costs) due to network effects in the software market and the market structure of the software market.¹⁶

Finally, a normative analysis on the importance of interoperability is presented, drawing on the case law that was analysed as well as existing scholarship and commentary.

1.5. Outcome

This paper establishes a more comprehensive concept of interoperability spanning competition law and intellectual property law, using legal and economic data sources.

To this end, the current situation in respect to European Union legislation and relevant case law from competition law and software copyright law is presented, which already features exemptions and recognizes the need for interoperability. Due to the network effects and the structure of the technology market however, it is argued that more legal certainty and greater recognition of interoperability for example through the requirement of open-standards could be beneficial. Not only for free and open source software but for the single (digital) market as a whole, as there are indications that otherwise small, innovative enterprises are much more likely to join an existing incumbent as soon as possible out of fear of too strict intellectual property enforcement.¹⁷ This would only make existing incumbents and their intellectual portfolios stronger, and is more likely to lead to competition concerns in the future.

§2. Background

2.1. Computer Basics

¹⁶ Bitzer (n 11).; Goode (n 11).; Lanzi (n 11).; Lin (n 11).; Hicks and Pachamanova (n 3).

¹⁷ Joshua S Gans and Lars Persson, 'Entrepreneurial Commercialization Choices and the Interaction between IPR and Competition Policy' (2012). Working Papers 16 accessed 10 May 2013.

When developing computer programs, this happens in one or more of a multitude of programming languages.¹⁸ These are human-readable instructions with a very specific syntax and format. These instructions are written to a text file, where together, they constitute ‘source code’. This source code is then turned into ‘object code’ which is what the computer can actually understand and execute, consisting of 0s and 1s or a precursor-format. This conversion process is called ‘compilation’ and the program that performs this, is called a ‘compiler’. The reverse process, relevant in the context of the exemptions in Directive 91/250 is called ‘decompilation’ though it generally only manages to return a crude image of what the original source code looked like.¹⁹

2.2. Software in law²⁰

How software is defined in law depends on the circumstances of a case or the legislation in which it is used. Below the main sources applicable in the European legal framework will be described.

On the international level, three agreements are in place, that affect copyright law in the member states of the European Union and the Union itself. While in front of a court parties seldom are able to rely directly on an international copyright treaty, they can be used to guide the judges and other authorities when interpreting relevant national or supra-national law.²¹

First, under the all-encompassing, but vague Article 2 of the Berne Convention, the protection of software is subsumed under the protection of all ‘literary and artistic works’, independent of their form.²² Secondly, under the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) clarifies in Article 10 that computer programs are protected as

¹⁸ Guibault and van Daalen (n 12). p. 6-7.

¹⁹ Directive 91/250/EEC on the legal protection of computer programs 17 May 1991, OJ L 122 (Council of the European Communities).;

²⁰ Axel H Horns, ‘Anmerkungen zu begrifflichen Fragen des Softwareschutzes’ (2001) 2001 Zeitschrift der Deutschen Gesellschaft für Gewerblichen Rechtsschutz und Urheberrecht (GRUR) 1 accessed 4 May 2013; Jaeger and Metzger (n 12); Vinje (n 14).

²¹ *SAS Institute Inc. v World Programming Ltd.* (n 10). para. 33-34.

²² Berne Convention for the Protection of Literary and Artistic Works 28 September 1979.

literary works under the Berne convention.²³ Thirdly, pursuant to Article 4 of the World Intellectual Property organisation (WIPO) Copyright Treaty computer programs are also protected as literary works within the meaning of the Berne Convention.²⁴ Thus while the Berne Convention itself is not clear on this, the TRIPS agreement and the WIPO Treaty which are in force with regard to European Union law, specify that computer programs are protected within the scope of literary works as well. This should also be the case in most member states, although a discussion of that would go beyond the scope of this work.

Crucially, both the TRIPS agreement and the WIPO Treaty specify that “Copyright protection shall extend to expressions and not to ideas, procedures, methods of operation or mathematical concepts as such” with almost identical wording.²⁵

On the European level, there are so far mainly two Directives applicable to the copyright protection of software. This is firstly the Directive 91/250²⁶ about the copyright protection of computer programs and Directive 2001/29, also known as the Information Society Directive.²⁷

In Directive 91/250, ‘computer programs’ are then defined in Recital 7 as

“programs in any form, including those which are incorporated into hardware; ... this term also includes preparatory design work leading to the development of a computer program, provided that the nature of the preparatory work is such that a computer program can result from it at a later stage;”²⁸

²³ ‘Agreement on Trade Related Aspects of Intellectual Property Rights: TRIPS’, *Marrakesh Agreement Establishing the World Trade Organization* (1994).; Jaeger and Metzger (n 12). p. 291.

²⁴ Art. 4 WIPO Copyright Treaty

²⁵ ‘Agreement on Trade Related Aspects of Intellectual Property Rights’ (n 23). Art. 9; WIPO Copyright Treaty 20 December 1996 (WTO). Art. 2.

²⁶ It should be noted, that in 2009 the newer Directive 2009/24/EC regarding the protection of computer programs was put into force, but as it is not referred to in any case law so far, did not introduce significant changes and has not been transposed, the name of the old Directive is still used.

²⁷ Jaeger and Metzger (n 12). p. 105, 291; Directive 2001/29 on the harmonisation of certain aspects of copyright and related rights in the information society 22 May 2001 (The European Parliament and the Council).

²⁸ Directive 91/250/EEC on the legal protection of computer programs (n 19). Rec. 7.

In the body of the Directive, this is embodied within Article 1, where the object of the protection is defined.²⁹

Furthermore, recital 14 clarifies in accordance with the applicable copyright treaties, ideas and principles are not protected under this Directive, though they might be protected under other legislation.³⁰

Subsequently, in Article 4 in conjunction with the other applicable provisions and Treaties mentioned above, reproduction is and other modifications are largely reserved for the rights holder. Article 5 only excludes all those acts from the exclusive protection that are necessary to make normal use of the computer program. This includes for example copies that are made in runtime memory (for example: Random Access Memory, RAM) or when the program is set up or backed up.³¹

Most importantly however, Article 6 of Directive 91/250 allows for certain, otherwise prohibited acts if their purpose is to achieve interoperability in Article 6 (1) a-c. At least in the English version, the precise interpretation is not clear. In Article 6 (2) a-c, it is said that the thusly obtained information may not be used for goals other than achieving interoperability and may not be given to others except for achieving interoperability (for which it has to be passed on as part of the program). Furthermore it is not to be used for the “development, production or marketing of a program substantially similar in its expression”. This expression seems to be there to discourage interoperable programs, which in their expression are too close to the original program.³² By looking towards Vinje writing in 1991 extensively about the Software Directive, it can become clear that the intention of the legislator was, after fierce debate, to allow competing products.³³ Additionally with Article 6 (3) and Article 9 of the Directive, the legislation tried to combine the exceptions with the absolute protection articulated in the Berne Convention and the right protected by other intellectual property

²⁹ *ibid.* Art. 1.

³⁰ *ibid.* Rec. 14.

³¹ *ibid.* Art4+5; See as an example acts permitted under German Copyright law, which implements the Directives and is in compliance with the international treaties: Jaeger and Metzger (n 12). p. 110; Vinje (n 14). p. 254.

³² Directive 91/250/EEC on the legal protection of computer programs (n 19). Art. 6; Vinje (n 14). p. 255.

³³ *ibid.* p. 258.

rights such as patent rights, trade marks, unfair competition, trade secrets or contract law.³⁴ This seems to be merely a provision to appease however, if the SAS case is to be seen as an example as will be shown later. Nonetheless, depending on the implementation in national law, companies which need to rely on it, or individual open-source developers, might be discouraged from developing innovative products as there is a high degree of legal uncertainty in those paragraphs with regard to what ‘unreasonably prejudices’ a rights holder or when or where exactly patent rights or trade secrets would be infringed. This can be difficult to discern even for seasoned intellectual property lawyers.³⁵

The Commission gave a separate definition in its Decision C(2004)900, for the general subject matter of an abuse of a dominant position in the case and the description of which interoperability information, regarding which software interfaces and protocols were discussed.³⁶

There, software was described thusly: “...word software refers to the instructions that direct the hardware operations, also designated as computer programs.”³⁷ This is as succinct and precise as it can get.

2.3. F(L)OSS³⁸

Free and open source software as it is known today came into existence in the 80s when with the birth of the internet and the accompanying hacker and enthusiast movement, community-driven, networked development of software became possible.³⁹

Since Richard Stallman and his Free Software Foundation (located in the US) then created the first version of the GNU (GNU is not Unix) GPL (GNU Public License), it has only become more and more popular, not only with enthusiasts and developers, but also with businesses and

³⁴ Directive 91/250/EEC on the legal protection of computer programs (n 19). Art. 6 & 9.

³⁵ Gans and Persson (n 17). p. 16.

³⁶ Commission Decision relating to a proceeding under Article 82 of the EC Treaty (Case COMP/C-3/37.792 Microsoft) (n 9).

³⁷ *ibid.* Rec. 21.

³⁸ Jaeger and Metzger (n 12).; Kemp (n 2).; Henley and Kemp (n 12).

³⁹ *ibid.* p. 77-78.

governments.⁴⁰ Today, it exists in many forms and variations and because this work is about the concept of interoperability, which is especially important to Free and Open Source Software, its further inception, evolution and current state will be briefly outlined below.

The terminology in this area is actually more complicated than it might seem, as terms such as ‘free’ or ‘open’ have different meanings depending on the context. The term ‘free software’ for example exists since the 80s, the often used phrase ‘Open Source Software’ however was only established in 1998.⁴¹

The first basic definition of free software was given by the (American) Free Software Foundation (FSF), which defines the liberties granted by and through free software licenses and summarizes them in the following, succinct phrase:

“Free software is a matter of the users’ freedom to run, copy, distribute, study, change and improve the software.”⁴²

While the software doesn’t have to be provided for free, to qualify as free or open source software, re-distribution has to be allowed, the license must not discriminate who can use the software and most crucial of all, modifications have to be allowed. This means that the source code from which the software is assembled has to be distributed and either can be re-distributed itself or at the very least changes to the source code must be allowed to be redistributed.⁴³

The key difference to ‘normal’ proprietary software is hence in the explicit rights granted for (re-) distribution, modification, analysis and duplication. It should also be clarified that the all the aspects mentioned above do not mean, that no money can be charged by the creator, best put by the phrase that still holds high value in the relevant tech community:

⁴⁰ Jaeger and Metzger (n 12). p. 42; Guibault and van Daalen (n 12). p. 8.;ibid. p. 1; Hicks and Pachamanova (n 3). p. 315.

⁴¹ Jaeger and Metzger (n 12). p. 1-2;

⁴² ibid. p. 1-2;

⁴³ ibid. p. 2;

“Free in the sense of free speech, not in the sense of free beer”⁴⁴

In the French speaking community, this is expressed through the term ‘logiciel libre’ which led the European Union to propose the use of the acronym ‘FLOSS’, Free, libre and open source software.⁴⁵

For ‘non-free’ software, generally the term ‘proprietary software’ is used, though it is not perfectly accurate, as the license through which the rights for modification and distribution are granted and enforced are based on the normal intellectual property rights.⁴⁶

To make the new development model more palatable to businesses (which had an aversion to the sound of ‘free’) the ‘Open Source Initiative’ was founded and from that point onwards many people chose to adopt the expression ‘Open Source Software’ instead.⁴⁷ This worked wonders for acceptance in the business world, with such companies as IBM, Sun und Oracle.⁴⁸

2.3.1.1. The viral effect (copy-left/non-copy left)⁴⁹

Despite the basic elements that all open source licenses have in common, significant differences between them do exist. Most importantly, licenses are categorized depending on whether they are ‘copyleft’ or ‘non-copyleft’. Copyleft refers to specific protection clauses used in many open source licenses, that require modifications of open-source software to be published under the same conditions as the original.⁵⁰ The most widely used examples of a copy-left license is the GPL (GNU Public License) in its three versions.

⁴⁴ *ibid.* p. 3.

⁴⁵ *ibid.* p. 3.

⁴⁶ Guibault and van Daalen (n 12). p. 36.

⁴⁷ *ibid.* p. 12.

⁴⁸ Jaeger and Metzger (n 12). p. 4.

⁴⁹ Guibault and van Daalen (n 12). p. 51; Jaeger and Metzger (n 12). p. 4; Henley and Kemp (n 12). p. 79.

⁵⁰ Guibault and van Daalen (n 12). ; Jaeger and Metzger (n 12).

Together, version 2 and 3 cover more than one third of open source projects.⁵¹ This is often also described as ‘reciprocal’ or ‘viral’ as it can have the effect of forcing these license obligations on programs or parts of a program or software system that code published under such a license is incorporated into. This helped a great deal to keep certain important open-source projects open, through requiring improvement to be made public if distributed, which in return served to strengthen the ideological ground from which they came.

Non-copy left or weak-copy left licenses do not include any protection clause at all (BSD-style licenses) or only a weak one such as the Mozilla Public License (MPL).⁵²

2.4. Interface competition law / IP⁵³

The issue of the inter-relationship between competition law (enabling market entry, protecting competition) and copyright law (protection of a company’s investment, exclusive rights) as raised for example in the Microsoft case is still very present today. In a recent working paper by the Swedish Entrepreneurship Forum, it was shown that in case of very strict copyright protection and enforcement, upcoming entrepreneurs are more prone to work under the umbrella of big incumbents, instead of competing with them.⁵⁴ This shows that strong copyright enforcement is not always beneficial, but can in fact be counter-effective to innovation. Along this line of reasoning, Wielsch describes that curbing the extension of copyright onto information that maybe should have no or no absolute copyright protection such as the TV listings in Magill (see below) can be seen as an external correction through competition law.⁵⁵

⁵¹ Black Duck Software, ‘Open Source License Data: Top 20 Most Commonly Used Licenses in Open Source Projects’ (2013)

<<http://osrc.blackducksoftware.com/data/licenses/>>; Guibault and van Daalen (n 12). p. 8.

⁵² Jaeger and Metzger (n 12). p. 4-5; Guibault and van Daalen (n 12). p. 10-11.

⁵³ Dan Wielsch, ‘Wettbewerbsrecht als Immaterialgüterrecht’ (2005) 2005 Europäische Zeitschrift für Wirtschaftsrecht 391 accessed 4 May 2013.

⁵⁴ Gans and Persson (n 17). p. 16.

⁵⁵ Wielsch (n 53). p. 392.

§3. The multiple legal and technical faces of interoperability⁵⁶

The concept of interoperability can be different depending on the context in which it is used. In the Microsoft saga and in literature it was described as a matter of degree.⁵⁷ In so far the Commission and Microsoft even agreed, although it didn't help Microsoft in the end.

Here, a differentiation is made between the context of competition law, the context of copyright law and the role of standards.⁵⁸ Independent of the legal context in which it is used, interoperability or the information required therefore is to some degree always required when different software products communicate either on the same computer or between computers exchanges some form of information. The information exchange happens through 'interfaces' which can be either material or immaterial connections between hardware or software.⁵⁹ This can for example be communication between computers, but also includes file formats or data structures. In any case, it is of special importance to Free and Open Source Software⁶⁰, as it not only relies on it but also historically it was and still is a goal of many open source projects to be as interoperable as possible, to make the most use of the program and the computer it runs on.

Pursuant to Hicks, interoperability is a part of compatibility, although for the purpose of this paper they will be used interchangeably because as far as software goes, interoperability all that is needed to achieve maximum compatibility.

3.1. A historical example of necessitated interoperability in the case of computer programs

⁵⁶ Vinje (n 14).; Kühn and van Reenen (n 13). p. 12.

⁵⁷ Commission Decision relating to a proceeding under Article 82 of the EC Treaty (Case COMP/C-3/37.792 Microsoft) (n 9). Rec. 33.

⁵⁸ Standards cannot be discussed in detail due to space and time constraints, but are mentioned as they are very relevant.

⁵⁹ Directive 91/250/EEC on the legal protection of computer programs (n 19). Preamble.

⁶⁰ Hicks and Pachamano (n 3). p. 316.

In his essay about Directive gives a good example about the importance of interoperability in the software market, independent of the involvement of Free and Open Source Software.⁶¹ In 1982, IBM introduced the IBM PC. Though at the time competing products still existed, it soon became the dominant product and network effects reinforced this trend.⁶² Soon, this force competing hardware vendors to emulate the IBM Bios, a small program also called ‘firmware’ that sits close to the hardware and initialize it when starting the computer.⁶³ This was further reinforced by popular application programs that required access to the ‘Bios’ directly instead of through Microsoft’s operating system as that intermediated access was too slow.

As a consequence, without having access to the source code of the Bios, these companies developed an independent firmware program, compatible with their hardware and acting the same way as an IBM Bios. This use is a good example of interoperable use, and would pursuant to Vinje also be covered under Directive 91/250. For this it was important that ‘function’ and through that ideas or processes were not protected as it had been discussed during the discussion about the Directive, as then a fully interoperable IBM Bios would have been impossible.⁶⁴ The author also already concluded that if necessary, certain minimal pieces of source code were allowed to be copied if necessary, such as when an early version of Microsoft Word looked for the word ‘IBM’ in the copyright notice of a graphics adapter firmware and if it was there turned on advanced capabilities, so competitors had to include a notice that said ‘IBM’ as well. Such minimal use of certain word should not be an issue anymore by a long shot, if the SAS case is any indication.

3.2. Interoperability from a competition law point of view⁶⁵

⁶¹ Vinje (n 14).

⁶² *ibid.* p. 251.

⁶³ *ibid.* p. 252.

⁶⁴ *ibid.* p. 255-256.

⁶⁵ Kalmo and Scopelliti (n 13).; Glorioso (n 13).; Kühn and van Reenen (n 13).

In the area of competition law, interoperability between systems, or more accurately the availability of ‘interoperability information’ is an issue in cases where under a specific market definition, a company has a dominant position or in any case a market share that is such as to create adverse, self-strengthening effects for competing companies that continuously strengthen the dominant position.⁶⁶ This results in a situation where a product by a competitor cannot be made reasonably compatible or interoperable with readily available information.⁶⁷ This then serves to strengthen the position of the already dominant product or company, as consumers will either have high costs in time or labour or even accept data loss if converting data is not possible by reasonable means.⁶⁸

In the ambit of the Microsoft Case (Workgroup Servers) Interoperability Information was defined by reference to the preambles of the ‘Software Directive’, Council Directive 91/250/EEC, which states:

“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 intended to function;

Whereas the parts of the program which provide for such interconnection and interaction between elements of software and hardware are generally known as interfaces;

Whereas this functional interconnection and interaction is generally known as interoperability; whereas such interoperability can be defined as the ability to exchange

⁶⁶ Komninos and Czapracka (n 13). p. 96; Kalmo and Scopelliti (n 13). p. 4-5.

⁶⁷ Hoehn and Lewis (n 13). p. 2-4.

⁶⁸ *ibid.* p. 2-4.

information and mutually to use the information which has been exchanged.”⁶⁹

While Microsoft argued that the ‘concept of full interoperability’ was beyond the meaning enunciated in the Directive, in the end this argument did not find favour with the court.⁷⁰

On a legal basis, competition law issues with regard to interoperability can arise when a dominant undertaking abuses its dominant position such as in the Microsoft case (Article 102 TFEU), merger control or potentially a coordinated refusal by a group of undertakings could also constitute an infringement under Article 101 or 102.⁷¹ The Microsoft case about work group servers was the first where it was shown on a legal level that interoperability is an important concept and that the release of compatibility information can be enforced. Independent of the prevalence of interoperability problems, the use of competition law to get a remedy will only be available in the most serious of cases. To this end Wielsch argued very convincingly in 2005 that competition law can serve as regulation of intellectual property law, so that Article 6 of Directive 91/250 about decompilation could even serve as a justification for competition law interference, to insure that the copyright is not abused.⁷²

3.3. Lock-in⁷³

In regard to the concept of interoperability in the software market, lock-in refers to technical and administrative measures, which make switching to a different software or software service very cost-intensive or impossible.⁷⁴

⁶⁹ Commission Decision relating to a proceeding under Article 82 of the EC Treaty (Case COMP/C-3/37.792 Microsoft) (n 9), Preamble.

⁷⁰ *ibid.*

⁷¹ Hoehn and Lewis (n 13). p. 2-4.

⁷² Wielsch (n 53). p. 392.

⁷³ S. J Liebowitz and S. E Margolis, ‘The Troubled Path of the Lock-In Movement’ (2013) 9 *Journal of Competition Law and Economics* 125 accessed 22 March 2013.; R. Polk Wagner, ‘Information wants to be free: Intellectual Property and the Mythologies of Control’ accessed 22 March 2013.

This is for example the case, if a consumer or company cannot migrate to a new system piece by piece, as it could if the competitor can achieve full interoperability with the competing system, or if it cannot easily convert existing data structures to a new program because of proprietary formats and lack of documentation and other interoperability information. In such a case, where manual conversion of data or a custom-built solution would be necessary, a developer of a competing product would have a hard time convincing potential customers to change, independent of how great his product is otherwise. This is even more of an issue with the rise of DRM (Digital-Rights-Management) in an attempt to apply tighter restrictions on works than is given by the law.⁷⁵

Additionally, a similar problem is presented below when looking at interoperability from a copyright perspective.

3.4. Interoperability from a copyright point of view⁷⁶

Interoperability from a copyright point of view is most prevalent, when an interoperable program is implemented without access to the source code of the software that interoperability should be ensured with.

Thus was the case in *SAS Institute Inc. v World Programming Ltd*⁷⁷, where after a reference from the High Court of England and Wales, the Court of Justice of the European Union ruled that the copyright by the SAS Institute did not cover the functionality, the programming language or the data format used.⁷⁸

The outcome of this case is especially relevant to open source products, as they frequently need to implement functionality, language compatibility or data formats derived from observing a program while running in conjunction with what limited information is available to ensure

⁷⁴ Kühn and van Reenen (n 13). p. 15

⁷⁵ Elkin-Koren and Salzberger (n 11). p. 204-205.

⁷⁶ Vinje (n 14).

⁷⁷ *SAS Institute Inc. v World Programming Ltd.* (n 10).

⁷⁸ *ibid.*

compatibility with commercial products or free and open source products with incompatible licenses.⁷⁹

3.5. The issue with standards⁸⁰

When examining the fringe between competition law and intellectual property law, the issue of standards has to be mentioned. While this can only be done to a limited extent within the scope of this work, it has to be addressed.

‘Standards’ might seem like an easy solution to interoperability, but this depends very much on ones understanding of standards. Standards as such are not always suited to achieve interoperability, as they can be proprietary standards or encumbered by patents, which can make them unfeasible to implement for small, innovative companies or free and open source projects. In some cases it can also be observed that multiple technology companies or groups of companies are actually competing to influence the standards setting process, because if their favoured standard ‘wins’ they stand to gain a lot in royalty payments.⁸¹ Similarly, ‘Quasi-Standards’ are proprietary or mostly proprietary developments that have, through market dynamics become ‘the standard’ just by almost everybody using it.⁸²

One solution could be ‘Open Standards’ though depending on where or by whom this word is used, it could have different meanings. Pursuant to Glorioso in 2005, who relies on Perens and his definition of Open Standards, the main elements of an Open Standard are availability, maximization of end-user choice, no royalty fee and extension or

⁷⁹ Jaeger and Metzger (n 12). p. 97-100.

⁸⁰ European Committee for Interoperable Systems, ‘Interoperability & Open Standards | ECIS’ <<http://www.ecis.eu/open-standards/>> accessed 22 May 2013.; Stanley M Besen and Robert J Levinson, ‘Introduction: The use and abuse of voluntary standard-setting processes in a post-rambus world: Law, economics, and competition policy’ (2012) 57 *The Antitrust Bulletin* accessed 4 May 2013. p. 11-12. Damien Geradin, ‘Ten Years of DG Competition Effort to Provide Guidance on the Application of Competition Rules to the Licensing of Standard-Essential Patents: Where Do We Stand?’ (21 January 2013) accessed 22 March 2013. p. 1, 5 & 6.

⁸¹ Enrico Bonadio, ‘Standardization Agreements, Intellectual Property Rights and Anti-competitive Concerns’ (2013) 1 *Queen Mary Journal of Intellectual Property* 22 accessed 14 May 2013. p. 24; Geradin (n 80). p. 2.

⁸² Bonadio (n 81). p. 24.

implementation of a subset should be allowed, while predatory extension should be prohibited. An example of predatory extension would be Microsoft's use of 'Kerberos' in Windows 2000.⁸³

§4. Case law analysis

For the main part of this work, relevant cases that are related to interoperability will be discussed below. They are discussed in a chronological order, which does not necessarily reflect their importance.

4.1. Magill⁸⁴

The Magill case, although not related to software, was the first significant case where the relationship between copyrighted information and competition law was under consideration.⁸⁵

The facts concerned copyrighted information regarding the listings of TV broadcasters and their publication by an independent publisher (Magill). Magill set out to publish weekly TV listings, as until that time, none were available, the TV stations would only give a license to newspapers and similar outfits to publish the listings for the next day, under certain conditions. This license was granted free of charge, but they did not want to grant a license to Magill and did not want weekly listings.⁸⁶

⁸³ Glorioso (n 13). p. 13.

⁸⁴ *Radio Telefis Eireann (RTE) and Independent Television Publications Ltd (ITP) v Commission (Magill)* (2011) C-241/91 P and C-242/91 P 1995 I-00743 (CJEU).; Karl H Pilny, 'Mißbräuchliche Marktbeherrschung gemäß Art. 86 EWGV durch Immaterialgüterrechte: Die Magill-Entscheidung des EuGH als Schnittstelle zwischen europäischem Wettbewerbs- und nationalem Urheberrecht' (1995) 1995 Zeitschrift der Deutschen Gesellschaft für Gewerblichen Rechtsschutz und Urheberrecht (GRUR Int) 954 accessed 4 May 2013.

⁸⁵ *ibid.* p. 955.

⁸⁶ *Radio Telefis Eireann (RTE) and Independent Television Publications Ltd (ITP) v Commission (Magill)* (n 84). Rec. 9; Pilny (n 84). p. 955.

Magill then filed a complaint with the Commission pursuant to Article 3 of Regulation 17, alleging that applicants used their dominant position to refuse supply under Article 86 of the EEC Treaty.⁸⁷

At the Court of First Instance, applicants were unsuccessful; their application for annulment of the Commission's decision was dismissed. At the Court of Justice, the applicants achieved at least interim relief.

The Court of First Instance had held, that there was an abuse of a dominant position, because although the defendants copyright in its own program listing in principle does allow it to control reproduction, this has to be restricted if the copyright is exercised in such a way as to be manifestly opposed to Article 86 EEC.⁸⁸

The Court of Justice then on 6th of April 1995, in its own analysis held that although an intellectual property right in itself cannot amount to a dominant position, the nature of the program broadcasters setting their own programs did constitute a dominant position.⁸⁹

As to the abuse of this dominant position, the Court of Justice held that contrary to the Appellants opinion, exercising the rights associated with an intellectual property right could, in certain circumstances amount to an infringement of competition law.⁹⁰

In the present case, the refusal by the applicants gave viewers no choice but to obtain the weekly schedule from each station separately and segregated the market for weekly listings to the applicants' themselves.

Furthermore, the court held trade between member states to be affected, as TV programmes and the corresponding listings by the stations were published in Ireland as well as the parts of the United Kingdom, so that they had the potential to affect trade between Member States.⁹¹

⁸⁷ *Radio Telefis Eireann (RTE) and Indenpendet Television Publications Ltd (ITP) v Commission (Magill)* (n 84). Rec. 11; Pilny (n 84). p. 956.

⁸⁸ *Radio Telefis Eireann (RTE) and Indenpendet Television Publications Ltd (ITP) v Commission (Magill)* (n 84). Rec. 28-30; Pilny (n 84). p. 956-957.

⁸⁹ *Radio Telefis Eireann (RTE) and Indenpendet Television Publications Ltd (ITP) v Commission (Magill)* (n 84). p. 957; Pilny (n 84). p. 956-957.

⁹⁰ *Radio Telefis Eireann (RTE) and Indenpendet Television Publications Ltd (ITP) v Commission (Magill)* (n 84). Rec. 50-52; Pilny (n 84). p. 957; See also: Wielsch (n 53). p. 391, on the tension between broad IP protection and the protection of competition.

⁹¹ *Radio Telefis Eireann (RTE) and Indenpendet Television Publications Ltd (ITP) v Commission (Magill)* (n 84). Rec. 59 & 69; Pilny (n 84). p. 959.

The Court of Justice also had to evaluate whether Article 9 of the Berne Convention granting exclusive rights of reproduction was infringed by the Commission decision or the judgement by the Court of First Instance. In the end, the Court of Justice held that even if the Convention would have to be interpreted in the way applicant's suggest, it is not applicable here, because no third country rights had been infringed making the old version not applicable as it had been signed pre-accession pursuant to Art. 234 EEC and the new one had been ratified by the UK only after accession and not yet at all by Ireland.⁹²

In the end, as stated above the case was dismissed entirely, the Court of Justice agreeing with the reasoning of the Commission, especially in so far as the actions by the applicants went beyond what would have been necessary to protect and properly exercise their copyright in the listing. Instead their conduct was held to be a business policy that was meant to protect their own business model to the detriment of competition on the market of weekly TV listings.⁹³

A short while later, a related case was judged in a similar way in Germany by the Oberlandesgericht Hamburg (Upper Regional Court).⁹⁴ That case, apart from being judged under national law and without any explicit reference to the Magill case mentioned above, was based on almost exactly the same set of facts. Only here, a TV broadcaster excluded one particular publisher from receiving its weekly program listings, despite those being otherwise distributed to competitors such as newspapers, magazines, distribution entities and TV guides. The broadcaster's management or persons related to it apparently had not been pleased to find a critical article in the complaining publisher's TV guide criticising them for certain business practices.⁹⁵

⁹² *Radio Telefis Eireann (RTE) and Indenpendet Television Publications Ltd (ITP) v Commission (Magill)* (n 84). Rec. 84 & 85; Pilny (n 84). p. 959.

⁹³ *Radio Telefis Eireann (RTE) and Indenpendet Television Publications Ltd (ITP) v Commission (Magill)* (n 84). Para. 100 & 104; Pilny (n 84). p. 962.

⁹⁴ *Belieferung einer Programmzeitschrift mit Programmplänen durch Fernsehsender* (1997) 3 U 90/96 1997 Zeitschrift für Urheber- und Medienrecht 393 (Oberlandesgericht Hamburg).

⁹⁵ *ibid.* p. 391-394.

As a result, they arbitrarily excluded that publisher from receiving their weekly program listings and asked distribution entities and other publishers to help them enforce the sanctions. This was an even more blatant and arbitrary abuse of copyright to the detriment of market participants.⁹⁶

4.2. The Microsoft Case ‘Saga’⁹⁷

There are many Microsoft Cases, as indicated by the media coverage that these received over the course of the last decades. For the purpose of this examination, only T-201/04, its follow-up T-167/06 and their related documents will be looked at. However, as this should not be yet another discussion of the Microsoft case, where not relevant for the broader analysis, facts, procedural steps or irrelevant findings of the judgement by the Court of Justice of the European Union will be left out. This goes especially for aspects of this case regarding the tying of Windows Media Player with the Windows Operating System. In any case, despite all the attention that the decision regarding tying of Windows Media Player or the case regarding tying of Internet Explorer got, the case examined here regarding interoperability information is much more important on a technical and legal level.

4.2.1. Facts / Technical Background

The technical background in this case revolved around the release of Windows 2000 and the introduction of new features relating to its use as a workgroup server system, connecting multiple client-side operating systems.⁹⁸ One example for such a feature was the proprietary extension of the ‘Kerberos’ authentication standard. While there were limited licensing

⁹⁶ *ibid.* p. 396-397.

⁹⁷ Commission Decision relating to a proceeding under Article 82 of the EC Treaty (Case COMP/C-3/37.792 Microsoft) (n 9).; *Microsoft v Commission* (n 9).; *Microsoft v Commission* (n 9)..

⁹⁸ Commission Decision relating to a proceeding under Article 82 of the EC Treaty (Case COMP/C-3/37.792 Microsoft) (n 9). Rec. 3 & 53.

agreements with certain competitors, those were not prolonged by Microsoft.⁹⁹

While there was some technical information and specifications available, these were deemed not sufficient by competitors and later on by the Commission and the European Courts as they related to older versions.¹⁰⁰ Even Microsoft did not argue against the point that for various differing computer systems or different software to work together, there always has to be some amount of interoperability between those systems.¹⁰¹ However, there was disagreement regarding the standard of interoperability required.¹⁰²

4.2.2. Procedural History

This ‘saga’ started with a complaint to the Commission by Sun Microsystems regarding Microsoft’s dominant position in the supply of operating systems for personal computers on 10th December 1998 based on Article 3 of Regulation 17.¹⁰³ Earlier, Sun had sent a letter to Microsoft requesting additional interoperability information.¹⁰⁴ The reply by Microsoft indicated that it was not willing to cooperate in a manner that could achieve full interoperability, esp. as former licensing agreements for technology compatible with older versions of Windows were not renewed. E-Mails revealed during the investigation proved that this was intentional.¹⁰⁵

⁹⁹ *ibid.* Rec. 212; Kühn and van Reenen (n 13). p. 7, 12.

¹⁰⁰ Commission Decision relating to a proceeding under Article 82 of the EC Treaty (Case COMP/C-3/37.792 Microsoft) (n 9). Rec. 194.

¹⁰¹ *ibid.* Rec 49; Maria Gil-Moltó, ‘Economic Aspects of the Microsoft Case: Networks, Interoperability and Competition’ (Leicester 12 November 2008). Department of Economics Working Papers 08/39 accessed 23 May 2013. p. 16.

¹⁰² Commission Decision relating to a proceeding under Article 82 of the EC Treaty (Case COMP/C-3/37.792 Microsoft) (n 9). Rec 33.

¹⁰³ *ibid.*; Kühn and van Reenen (n 13). p. 7.

¹⁰⁴ Commission Decision relating to a proceeding under Article 82 of the EC Treaty (Case COMP/C-3/37.792 Microsoft) (n 9). Rec. 200; ‘Council Regulation No 17 (EEC): First Regulation implementing Articles 85 and 86 of the Treaty (later Articles 81 and 82)’, *OJ 013* (1962). This would be Regulation 1/2003 today.

¹⁰⁵ Commission Decision relating to a proceeding under Article 82 of the EC Treaty (Case COMP/C-3/37.792 Microsoft) (n 9). Rec. 215-126; Kühn and van Reenen (n 13). p. 6.

In February 2000, the Commission finally and officially launched an investigation pertaining to the lack of interoperability for workgroup servers and the tying of Windows Media Player with the Windows Operating System.¹⁰⁶

In the end of 2001, the FSFE (Free Software Foundation Europe, an important institution for the European Open Source Community) asked for third party status in the proceedings, which was granted shortly afterwards. After also getting access to non-confidential documents from Microsoft, they comment on the discriminatory nature of the case towards Free and Open Source Software.¹⁰⁷

In the continuing investigation, in 2003 the Commission conducts a thorough market inquiry, the results of which can be found in Decision C(2004)900 final.¹⁰⁸ In August 2003, the Samba Team (an open source project heavily impacted by Microsoft's behaviour) submits a letter to the Commission why they cannot sign Microsoft licensing agreements requiring per-client royalty payments.¹⁰⁹ In September of the same year, the FSFE tenders a submission to the Commission regarding the failure of a settlement that Microsoft reached with the US authorities to restart competition. The Samba Team proposes that the European Union authorities should force Microsoft to make its proprietary network protocol information and proprietary data formats available in a royalty free, non-discriminatory manner, similar to the still popular TCP/IP protocol that is used between computers connected to the Internet.¹¹⁰

On the 24th of March 2004, the Commission releases its final decision up to this point, Decision C(2004)900 final. Microsoft is found to have created a

¹⁰⁶ Commission Decision relating to a proceeding under Article 82 of the EC Treaty (Case COMP/C-3/37.792 Microsoft) (n 9). Rec. 3-5.

¹⁰⁷ FSFE, 'European Commission vs Microsoft: chronology of the case' (4 May 2013) <<http://fsfe.org/activities/ms-vs-eu/timeline.en.html>> accessed 4 May 2013.; Glorioso (n 13). p. 16-17.

¹⁰⁸ Commission Decision relating to a proceeding under Article 82 of the EC Treaty (Case COMP/C-3/37.792 Microsoft) (n 9). p. 88-97; Glorioso (n 13). p. 17.

¹⁰⁹ FSFE (n 107); Glorioso (n 13). p. 6 & 17.

¹¹⁰ Commission Decision relating to a proceeding under Article 82 of the EC Treaty (Case COMP/C-3/37.792 Microsoft) (n 9). p. 155; Letter from Free Software Foundation Europe to Commission of the European Communities (26 July 2004).

dominant position for itself, disrupting existing interoperability and then to have abused and exploited that dominant position.¹¹¹

On the 27th of May 2004, Microsoft outlines its compliance measures to comply with Decision C(2004)900. It committed to identifying all technologies necessary to comply with Article 1 of Decision C(2004)900 and make specific required technologies available on a RAND (reasonable and non-discriminatory) basis.¹¹²

In June 2004, Microsoft then appeals to the CFI (Court of First Instance) of the European Union (now the General Court), with one case to suspend the penalties imposed and another to annul Decision C(2004)900 as a whole.¹¹³

On 27th of July 2004, FSFE again is allowed to take part in the proceedings for which it applied in June 2004. They again stress the importance of knowing about network protocols used and related specifications to establish interoperability.¹¹⁴

On 22nd December 2004, the Court of First Instance dismisses the case for interim measures and orders Microsoft to comply with the earlier decision.¹¹⁵

In 2005, specifically on the 10th of November, the Commission orders a periodic penalty against Microsoft for failing to comply as the Documentation prepared is "neither accurate nor complete". In addition, the rates charged for access and authorization to the information were found to be excessive. The penalty is later increased.¹¹⁶

In the appeal on the merits, where FSFE was also allowed to intervene, it takes the view (together with Samba Team) that the offer to license only

¹¹¹ Commission Decision relating to a proceeding under Article 82 of the EC Treaty (Case COMP/C-3/37.792 Microsoft) (n 9). Art. 1 & 2, Chapter 5.2 & 5.3.

¹¹² FSFE (n 107).; Microsoft, 'Public Undertaking (Commitments) by Microsoft' (24 July 2009) accessed 24 March 2013.

¹¹³ *Microsoft v Commission* (n 9). para. 59-60.

¹¹⁴ *ibid.* para. 282; FSFE (n 107).; Glorioso (n 13). p. 5-6.

¹¹⁵ *Microsoft v Commission* (n 9). para. 61.

¹¹⁶ Commission Decision fixing the definitive amount of the periodic penalty payment imposed on Microsoft Corporation by Decision C(2005)4420 final and amending that Decision as regards the amount of the periodic penalty payment 6 September 2006 (Commission of the European Communities). Rec. 21 & 27, 52, Article 1;

parts of Windows' source code is insufficient to comply with the earlier decision.¹¹⁷

On 17th September 2009 Microsoft loses its appeal against the full case on the merits. The fine and the requirements regarding the interoperability information are upheld. The month after that, Microsoft announces its compliance with the ruling by the Court of First Instance. For commercial vendors, it asks for 0.4 % of patent licensing royalties and says it will not pursue patent royalties from individual or non-profit developers. However, there is still a one-time access fee of 10.000 EUR. The Commission is satisfied for now that Microsoft complies with its obligations of the decision from 2004¹¹⁸, but on the 27th of February 2008, the Commission sets an additional fine for failing to provide the interoperability information on RAND terms.¹¹⁹

This fine is appealed on the 9th of May 2008.¹²⁰ The FSFE, the Samba Team and additional companies with an interest in Free and Open Source Software intervene again.¹²¹

On the 27th of June 2012, the General Court gives its ruling. The original decision is largely upheld. According to the Commission it is the first time that the General Court has ruled on a penalty payment that was imposed for non-compliance with an earlier decision.¹²²

Following the 2008 penalty payment decision Microsoft posted the interoperability information subject to the decision free of charge on its web site.¹²³

4.2.3. Findings by the Institutions

¹¹⁷ FSFE (n 107).; *Microsoft v Commission* (n 9). para. 282; Glorioso (n 13). p. 12-13.

¹¹⁸ FSFE (n 107).; Hoehn and Lewis (n 13). p. 24.

¹¹⁹ Commission Decision fixing the definitive amount of the periodic penalty payment imposed on Microsoft Coporation by Decision C(2005)4420 final 27 February 2008, C(2008) 764 final (Commission of the European Communities). Rec. 280.

¹²⁰ *Microsoft v Commission* (n 9). para. 56.

¹²¹ *ibid.* para. 57; FSFE (n 107).

¹²² *Microsoft v Commission* (n 9). Article 1 and 2. European Commission, *Antitrust: Commission welcomes General Court judgment in Microsoft compliance case* (MEMO/12/500, 2012).

¹²³ FSFE (n 107).

4.2.3.1. Case by the Commission

The case by the Commission went into significant detail to explain the technical nature of the matter, the results of the market inquiry and the finding of a dominant position and its abuses.

As to the technical nature of the matter at hand, some explanation in that regard can be found above. Here it is important to note that Microsoft during its submissions even admitted that certain parts of its protocols developed for one or more of its Windows 2000 products were not documented or available for third party services on a non-Windows platform.¹²⁴ Contrary to the Commission, it held that as the parts withheld were deeply entrenched within Windows 2000 and not an ‘interface’ by its definition, it was outside the scope of interoperability information that had to be provided or that interoperability was ‘good enough’.¹²⁵ The Commission disagreed, especially as almost anything could be deeply embedded or included in an operating system. Other efforts by Microsoft were also not seen as solutions, sometimes they were even characterized as having the opposite goal, as was the case for ‘Unix Service for Windows’ which was seen as a tool to facilitate migration to a Windows environment, not to encourage interoperability or increase competition.¹²⁶

The Commission also explicitly held that Article 82 of the Treaty was infringed, as Microsoft was an undertaking within the meaning of Article 82 and its conduct affected the whole of the Communities’ territories. As a result of that analysis, trade was held to be affected.¹²⁷

The Commission differentiated the market on the demand side in client-side operating systems, operating systems for other client appliances (such as phones) and server operating systems. The first were held not to be easily interchangeable, as substantial effort would have to be made and they normally used for entirely different purposes. On the supply side, there was

¹²⁴ Commission Decision relating to a proceeding under Article 82 of the EC Treaty (Case COMP/C-3/37.792 Microsoft) (n 9). Rec. 217; Kühn and van Reenen (n 13). p. 12-13.

¹²⁵ *ibid.* p. 13.

¹²⁶ Commission Decision relating to a proceeding under Article 82 of the EC Treaty (Case COMP/C-3/37.792 Microsoft) (n 9). Rec. 280.

¹²⁷ *ibid.* Rec. 990.

also deemed no substitutability, as small increases in price for example would not enable a competing software publisher to quickly write or switch to producing a client-side operating system because of high barriers of entry.¹²⁸ Finally and crucially, the Commission identified Work-group server operating systems as a separate market, as they are neither as specialized as other servers, but also do not necessarily face such high barriers of entry as client side operating systems have. This was supported by evidence from the Commission's market inquiry.¹²⁹ This identification of the different markets was supported by the way in which different versions of Windows were marketed and priced as well.¹³⁰ In the end, the Commission stressed the importance of interoperability for Work Group Server systems again.¹³¹ It also found no easy supply-side substitution for work-group operating systems.¹³²

The Commission also found that Microsoft's market share for client-side operating systems was above 90 % and persistent for many years and the market share for work-group server operating systems was at least 60 %.¹³³ This, in conjunction with the network effects (high barriers to entry) that were present on the existing markets and the interrelationship between the markets brought the Commission to the conclusion that, similar to the Court's established case law in *Tetra Pak II*, Microsoft had a dominant position within the meaning of Article 82 of the Treaty on the market for workgroup server operating systems.¹³⁴

When then assessing whether Microsoft also had abused its dominant position, the Commission based its reasoning first on the classification of Microsoft's behaviour as a refusal to supply. The case law this is based on is

¹²⁸ *ibid.* Rec. 342; *Glorioso* (n 13). p. 2.

¹²⁹ Commission Decision relating to a proceeding under Article 82 of the EC Treaty (Case COMP/C-3/37.792 Microsoft) (n 9). Rec. 349.

¹³⁰ *ibid.* Rec. 373.

¹³¹ *ibid.* Rec. 386; *Kalmo and Scopelliti* (n 13). p. 3-5.

¹³² Commission Decision relating to a proceeding under Article 82 of the EC Treaty (Case COMP/C-3/37.792 Microsoft) (n 9). Rec. 401.

¹³³ *ibid.* Rec. 431, 499; *Kalmo and Scopelliti* (n 13). p. 4.

¹³⁴ Commission Decision relating to a proceeding under Article 82 of the EC Treaty (Case COMP/C-3/37.792 Microsoft) (n 9). Rec. 544 & 742; *Kominos and Czapracka* (n 13). p. 96.

long-standing, starting with *Commercial Solvents*¹³⁵ (raw materials), *Télémarketing*¹³⁶ (service), *Magill*¹³⁷ (copyright protected program listings, see above). To each of Microsoft's previous objections, the Commission methodically reiterates its reasoning, and clarifies apparent misunderstandings. Of main importance there were the fact that even if only the client-side market with over 90 % market share counts as dominant, pursuant to *Tetra-Pak II* this doesn't matter for such interlinked markets. The refusal to supply was a refusal as there was previous supply and the refusal was not about having to allow copies of windows or a license to source code. In conjunction with the earlier case law mentioned, Microsoft's conduct risked elimination of competition and foreclosure of the market (today it would be called lock-in effect, such as for mobile phones) and as such there was an abuse of the dominant position.¹³⁸

Adding to its analysis of an effect between member states, the Commission states that pursuant to *United Brands* it is irrelevant whether a case concerns trade between member states or trade on the markets of all member states by a company from a foreign state.¹³⁹

Most importantly, the Commission then ordered Microsoft to disclose relevant interoperability information as defined in Article 1 of the decision.¹⁴⁰

4.2.3.2. Case for interim measures¹⁴¹

In this case, Microsoft sought to achieve interim relief pertaining to its obligation by the 2004 Commission decision to make the relevant

¹³⁵ *Commercial Solvents v Commission* 6 & 7-73, [1974] OJ 223 (Court of Justice). para. 24.

¹³⁶ *Télémarketing v CLT and IPB* 311/84, [1985] ECR 3261 (Court of Justice). para. 26.

¹³⁷ *Radio Telefís Eireann (RTE) and Independent Television Publications Ltd (ITP) v Commission (Magill)* (n 84). para. 27.

¹³⁸ Commission Decision relating to a proceeding under Article 82 of the EC Treaty (Case COMP/C-3/37.792 Microsoft) (n 9). Rec. 788; *Komninos and Czapracka* (n 13). p. 87.

¹³⁹ Commission Decision relating to a proceeding under Article 82 of the EC Treaty (Case COMP/C-3/37.792 Microsoft) (n 9). Rec. 991; *United Brands v Commission* [1978] 27/76, [1978] ECR 207 (Court of Justice). para. 201.

¹⁴⁰ Commission Decision relating to a proceeding under Article 82 of the EC Treaty (Case COMP/C-3/37.792 Microsoft) (n 9). Rec. 999. (Article 4, 5, 6 of the actual decision).

¹⁴¹ *Microsoft v Commission* [2004] T-204/01 R, [2004] II-04463 (Court of First Instance).

interoperability information as specified in Articles 4, 5 and 6 of the decision available. This application was however dismissed in its entirety.¹⁴² Microsoft specifically tried to argue that its business policy would be irreparably harmed, its intellectual property irreparably infringed and competitors could from the information required not only produce interoperable systems but also copy its operating system and would do so.¹⁴³ Those points were not found to have been proven and had no resemblance to the facts, as proven by subsequent developments.

4.2.3.3. Case on the merits¹⁴⁴

This constituted the main appeal on the merits in case T-204/01 pertaining to Commission Decision C(2004)900, either for annulment of the decision at issue or in the alternative a reduction or annulment of the fine. Notably, Microsoft was supported by certain industry associations and related companies, whereas the Commission's position was supported by the Free Software Foundation Europe (FSFE), the European Committee for Interoperable Systems (ECIS) and others. The court was sitting as a grand chamber.

In the decision, the court takes great care to describe the technical facts once more, mainly based on the decision of the Commission. The court furthermore finds no issue with the general categorization of the facts under Article 82 (now 102) of the Treaty.¹⁴⁵

Lengthy arguments were devoted to the issue of the intersection between the competition law remedy of the disclosure of certain information ordered by the Commission and the copyright that Microsoft owned in its own developments. It came down to the fact that the Commission had not said that its remedy had no relation to the defendant's intellectual property, but that it was quite reasonable and that it had not ordered to disclose

¹⁴² *ibid.* para. 478.

¹⁴³ Komninos and Czapracka (n 13). p. 88-89; *Microsoft v Commission* (n 141). para. 317-320.

¹⁴⁴ *Microsoft v Commission* (n 9).

¹⁴⁵ *ibid.* para. 319.

everything, just the parts that were necessary for full interoperability and competition.¹⁴⁶

The definition of interoperability was again the subject of debate, as it was in the proceedings leading to the decision in 2004, despite the Commission and Microsoft agreeing that interoperability is a matter of degree.¹⁴⁷ Specifically, Microsoft wanted to base interoperability on the definition given in Article 6 of Council Directive 91/250/EEC of 14 May 1991 on the legal protection of computer programs which it perceived to be narrower. However, Microsoft's argument stayed too vague for the court, which finds the definition used in the 2004 Decision and that used in the Directive consistent.¹⁴⁸

Additionally, the court found the Commission's approach of defining interoperability by reference to what was necessary to enable developers on non-Microsoft operating systems to produce a competing product and stay on the market well founded. It expressly stated that this approach was not open to dispute by reference to the special responsibility that a dominant position requires.¹⁴⁹

4.2.3.4. Case against the penalty payment for failure to comply¹⁵⁰

This case was brought by Microsoft, after the Commission had fined it again for failure to supply the interoperability information and to do so on reasonable terms. According to Commissioner for Competition at the time, Neelie Kroes, it was the first time a company was fined for the failure to comply with remedies imposed on it, "and hopefully the last."¹⁵¹ The case ended with the court dismissing the case, except for a marginal reduction of the fine for a letter sent to Microsoft where DG Competition suggested that Microsoft could prevent distribution of software based on information

¹⁴⁶ *ibid.* para. 227;

¹⁴⁷ Komninos and Czapracka (n 13). p. 86.

¹⁴⁸ *Microsoft v Commission* (n 9). para. 158, 227, 255.

¹⁴⁹ *ibid.* para. 228 & 229.

¹⁵⁰ *Microsoft v Commission* (n 9).; Barazza (n 13).

¹⁵¹ European Commission, *Antitrust: Commission welcomes General Court judgment in Microsoft compliance case* (n 122).; Neelie Kroes, *Press conference on imposing penalty payments on Microsoft – introductory remarks: SPEECH/06/452* (2006).

released due to the 2004 decision in source code form, while the appeal was pending.¹⁵² According to the Commission's submission in the proceedings, the letter constituted an attempt to balance the interest of the parties.¹⁵³ This would have prevented any free and open-source development, as due to the open model of development, source-code is in most cases always available, even during development.

In particular, the court confirmed that without convincing evidence proving the innovative character of certain interoperability information, Microsoft's remuneration schemes used until 22nd October 2007 were unreasonable.¹⁵⁴ Especially as the Commission characterised only 7 of the 173 protocols submitted as innovative to be contain actual innovation, as comparable alternatives to the others were offered royalty free.¹⁵⁵

Of particular importance was furthermore that the court also upheld the Commission's approach of assessing the intrinsic value of a technology through market analysis instead of the strategic value.¹⁵⁶

4.2.4. Conclusion

Business practices such as the one Microsoft was fined for in this saga of European Union Competition law are still pervasive in the technology industry, even if they do not always have the same impact.¹⁵⁷ Even though they might often be legal under competition law because a company that carries them out is not in a dominant position, they still can create harm for consumers or businesses as it is hard to predict how a software product will develop or with what it will or will not be compatible down the road.¹⁵⁸ If Microsoft would have adhered to an open-standard, this all could have been avoided, or if at least the Commission would have required licensing similar to an Open Standard from the start. Though it seems that Microsoft is at least somewhat more considerate today than it was in the past, it is possibly

¹⁵² Barazza (n 13). p. 57; *Microsoft v Commission* (n 9). para. 222-223.

¹⁵³ *ibid.* para. 224.

¹⁵⁴ Barazza (n 13). p. 56.

¹⁵⁵ *ibid.* p. 56.

¹⁵⁶ *ibid.* p. 58.

¹⁵⁷ Lin (n 11). p. 78; Elkin-Koren and Salzberger (n 11). p. 206.

¹⁵⁸ *ibid.* p. 206-210.

still engaged in similar practices today, as will be explained in more detail below.¹⁵⁹

4.3. BSA v Ministry of Culture¹⁶⁰

This case, also referenced to a limited extent in Case C-406/10 SAS discussed below, can be seen as the European Union's equivalent to the case *Lotus v. Borland* in the US. It also examined whether or how far the interface of a program is protected under copyright law, which in case of BSA was an implementation of Directive 91/250.¹⁶¹ Hence, as a precursor to some of the issues discussed in SAS, it is included here.

4.3.1. Facts & Procedure

The BSA (Bezpečnostní softwarová asociace) had tried to get a permit for the collective administration of copyrights in computer programs since 2001, before the Czech republic joined the European Union.¹⁶²

Thereafter, there was a rejection decision by the responsible Ministry of Culture, legal appeal, followed by a second decision and finally a third decision in 2005 after the 2nd decision was automatically annulled when BSA objected. A further objection was dismissed on 6th June 2005. When BSA appealed that decision, BSA argued the definition of a computer program in Czech copyright law not only covers source code or object code, but also interfaces, as which it saw the user interface.¹⁶³ This action was

¹⁵⁹ See Chapter 4.5; Groklaw, 'Let's Hear From the Trolls For a Change: IP Litigation blog Groklaw on Microsoft and Nokia making money on through indirect patent assertion' (3 May 2013) <<http://www.groklaw.net/article.php?story=20130502213843772>> accessed 23 May 2013.

¹⁶⁰ *BSA (Bezpečnostní softwarová asociace – Svaz softwarové ochrany) v Czech Ministry of Culture (Ministerstvo kultury)* [2010] C-393/09, [2010] I-13971 (Court of Justice of the European Union).

¹⁶¹ *Lotus Development Corporation v. Borland International, Inc.* (1996) 516 U.S. 233 (1996) (United States Court of Appeals of the First Circuit). The main issue was whether or not certain parts of the interface or functionality was allowed to be independently implemented in a competing program to ease the transition for users.

¹⁶² *BSA (Bezpečnostní softwarová asociace – Svaz softwarové ochrany) v Czech Ministry of Culture (Ministerstvo kultury)* (n 160). para. 15 & 20-25.

¹⁶³ *ibid.* para. 19; In this area of law, also within the scope of Directive 91/250 and related documents, 'interface' normally refers to a programming interface through which different

dismissed and then appealed to the Supreme Administrative Court, where BSA argued that every time a user interface is displayed by a screen, this constituted use of the program and as such this use should be protected.¹⁶⁴

The Supreme Administrative Court then decided to refer two questions to the Court of Justice of the European Union.¹⁶⁵

First, the referring court asked if Article 1 (2) of Directive 91/250¹⁶⁶ should be interpreted as including, for the purpose of protection of 'the expression in any form of a computer program', the user interface of a program. Secondly, the court asked, if television broadcast of that interface constituted making part of a work available to the public under Article 3 (1) of Directive 2001/29.¹⁶⁷

4.3.2. Findings by the court

Regarding the first question, the court held that while the object of protection under Directive 91/250 is quite broad and can include such things as design work, the graphic user interface does not constitute an 'expression' of the computer program within the meaning of the Directive. The main argument was that it does not constitute a part that could result in a functional program if displayed and is not sufficiently original.¹⁶⁸ In holding so, it followed the Advocate General's opinion.

Then, although the referring court did not ask for this, the Court of Justice of the European Union held that even though the interface is not protected by Directive 91/250, depending on the extent of personal intellectual creation

programs or machines communicate with each other. The user interface, while being used for communication with the user, is not included in this definition.

¹⁶⁴ *ibid.* para. 20.

¹⁶⁵ *ibid.* para. 21.

¹⁶⁶ Directive 91/250/EEC on the legal protection of computer programs (n 19).

¹⁶⁷ Directive 2001/29 on the harmonisation of certain aspects of copyright and related rights in the information society (n 27).

¹⁶⁸ *BSA (Bezpečnostní softwarová asociace – Svaz softwarové ochrany) v Czech Ministry of Culture (Ministerstvo kultury)* (n 160). para. 34-42; For more on originality see: Eleonora Rosati, 'Judge-made EU copyright harmonisation : the case of originality' (EUI PhD theses, European University Institute 22 October 2012).

that went into it, this could fall under the scope of the protection of Directive 2001/29.¹⁶⁹

The second question was then answered briefly in the negative. Although authors are given the right to control exclusive distribution of their work, the court held that a broadcast by television does not make a computer program public under Directive 2001/29, as it merely passively displays the interface, without interaction, one of the defining characteristics of computer programs being possible.¹⁷⁰

It can be observed, that especially for the subject matter, this whole decision is quite short, especially compared to other decisions in intellectual property law such as SAS. It might be, that the court did not want to waste too much time on this matter, as so far no other instances are known where an association of in the area of software tried to get the right to collectively administer copyrights for computer programs.

It is not clear from the facts of the case brought before the Court of Justice of the European Union what the association's plan would have been in particular, but on the questions referred to the court, the issue was related to the likeness of programs display on TV or other mediums.¹⁷¹

Even if real programs would frequently be displayed on TV or in movies, it would seem, that except for documentaries or how-to videos, producers would rather use a made up interface than have to pay royalties for including a real program interface. Based on the facts given in the Court of Justice of the European Union's judgement, this view that it was a rather useless endeavour was shared by the Czech Ministry of Culture and based on the brevity of the judgement maybe also Court of Justice.¹⁷²

The Ministry had already held on 27th of January 2005, that a computer program was protected mainly through protection of the source code and object code, whereas a graphical user interface could be protected by unfair competition law or, depending on the kind of creation (such as an image)

¹⁶⁹ *BSA (Bezpečnostní softwarová asociace – Svaz softwarové ochrany) v Czech Ministry of Culture (Ministerstvo kultury)* (n 160). para. 43-47.

¹⁷⁰ *ibid.* para. 57-58.

¹⁷¹ *ibid.* para. 20.

¹⁷² *ibid.* para. 18.

under general provisions as well, but not as a computer program.¹⁷³ The Ministry also observed at that point, that while collective administration of copyrights for computer programs could be possible in theory, that there was no purpose to it and that mandatory collective administration was altogether not an option. This means that no enforcement gap exists, a view shared by legal commentaries, even if some of them take issue with the legal reasoning of the court.¹⁷⁴

4.3.3. Conclusion

Seeing as most programs are sold through licensing agreements and without access to source or object code cannot be readily copied such as images or texts, the decisions by the Ministry and later the European Court of Justice seem logical.

In the area of Open Source Software and alternative licensing, developers already face increasing hurdles through software patents and interoperability issues, so that a wholly different ruling in this case, redefining how far the expression of a computer program reaches could have meant an even broader protection for computer programs, with potentially unforeseeable consequences for *SAS* and future cases.¹⁷⁵

4.4. *SAS Institute Inc. v World Programming Ltd.*¹⁷⁶

The *SAS* case is a much more recent one than the *Microsoft* case and focuses on the copyright aspect of interoperability, not the supply of interoperability information by an undertaking in a dominant position as defined by competition law.

¹⁷³ *ibid.* para. 18.

¹⁷⁴ Jochen Marly, ‘Der Urheberrechtsschutz grafischer Benutzeroberflächen: Zugleich Besprechung der EuGH-Entscheidung „BSA/Kulturministerium” [2011] Zeitschrift der Deutschen Gesellschaft für Gewerblichen Rechtsschutz und Urheberrecht (GRUR) 204 accessed 23 May 2013. p. 207-208; IPKat, ‘Interface, in-yer-face: Court of Justice rules on Czech GUIs’ (23 December 2010) <<http://ipkitten.blogspot.de/2010/12/interface-in-yer-face-court-of-justice.html>> accessed 23 May 2013.

¹⁷⁵ Compared to other kinds of works, the protection for computer programs is already extensive; Marly (n 174). p. 207-208.

¹⁷⁶ *SAS Institute Inc. v World Programming Ltd.* (n 10).;

It is similar to an older case from the United States, where the issue was whether certain points of the graphical user interface such as menu items and structures were allowed to be similar for compatibility reasons. This and the compatibility of certain macros made it easier for users to switch. This was the case in *Lotus v. Borland*, which is seen as an important case by observers that defined the scope of software copyright.¹⁷⁷

4.4.1. Facts / Technical Background

The SAS case was a case brought in the United Kingdom by the SAS Institute Inc., a developer of (business) analytics software against World Programming Ltd, developer of similar systems, for the “infringement of copyright in computer programs and manuals related to its computer database system”.¹⁷⁸

With this system, users can write scripts that they then run against their own data. These are written in a specialized language called ‘SAS language’. As WPL felt that there was a market for its own software with compatibility to the SAS system, it created the ‘World Programming System’ that can run scripts written for the SAS system with almost full interoperability.¹⁷⁹

Crucially, the High Court, which referred the case, held that as far as it was known, WPL had had no access to the source code of any SAS programs, or copied any of their parts.

4.4.2. Procedural History¹⁸⁰

The case was brought before the English High Court on 14th September 2009 and preliminary judgement was given on 23rd July 2010.¹⁸¹ In this judgment, certain questions were referred to the Court of Justice of the European Union. Specifically, the High Court sought to confirm its

¹⁷⁷ *Lotus Development Corporation v. Borland International, Inc.* (n 161).

¹⁷⁸ *SAS Institute Inc. v World Programming Ltd.* (n 10). Para. 2.

¹⁷⁹ *ibid.* Para. 23-24.

¹⁸⁰ *SAS Institute Inc v World Programming Ltd.* (n 10).; *SAS Institute Inc. v World Programming Ltd.* (n 10).; *SAS Institute Inc v World Programming Ltd* (n 10).

¹⁸¹ *SAS Institute Inc v World Programming Ltd.* (n 10). para. 1-7.

interpretation of the Computer Programs Directive whereas (1) implementing interoperability functionality in a program did not constitute a breach of copyright of the program it was made interoperable with (Questions 1-5) and (2) whether pursuant to Article 5 (3) of the Directive, acts done with a lawfully acquired program that fall outside of the scope of its license for the purposes of interoperability are permitted (Questions 6-7). Additionally, the High Court asked (3) if Article 2 (a) of Directive 2001/29 should be interpreted in such a way that possible reproductions of the manual of one program in the manual for another program constitute an infringement (Questions 8-9).¹⁸²

On 2nd May 2012 the Court of Justice gave its answers to the questions, after which on 25th January 2013, the High Court gave its final judgement.¹⁸³

4.4.3. Findings

In the following paragraphs, the answer to the reference questions given by the Court of Justice will be laid out.

Regarding questions 1 to 5, the Court of Justice of the European Union essentially asks if under Article 1 (2) of Directive 91/250, not only the specific expression given to it, but also the general functionality of a computer program as well as the programming language developed for it and the format of its data files constitute the expression that is the object of protection.¹⁸⁴ In Case C-393/09 *BSA* this court held that while the source code and object code of a program are always forms of expression of a program, the graphical user interface and the functionality is normally not protected by copyright, though the graphical user interface can be protected under unfair competition law.¹⁸⁵

¹⁸² *SAS Institute Inc. v World Programming Ltd.* (n 10). para. 28.

¹⁸³ *ibid.*; *SAS Institute Inc v World Programming Ltd* (n 10).

¹⁸⁴ *SAS Institute Inc. v World Programming Ltd.* (n 10). para. 29; Sally Weston, 'Software Interfaces – Stuck in the Middle.: The Relationship Between the Law and Software Interfaces in Regulating and Encouraging Interoperability' [2012] *International Review of Intellectual Property and Competition Law* 427 accessed 23 May 2013. p. 438-439.

¹⁸⁵ *SAS Institute Inc. v World Programming Ltd.* (n 10). para. 39; Chapter 4.3.

This is an incredibly important point for the freedom of creation, innovation but also competition, which the Advocate General put nicely in this case by saying:

”[...] to accept that the functionality of a computer program can be protected by copyright would amount to making it possible to monopolise ideas, to the detriment of technological progress and industrial development.”¹⁸⁶

Moreover, as the court points out, that is precisely why it makes sense to protect software under copyright and not a special right or a different solution. Only the specific expression is protected, but ideas are not, so that authors can compete with similar programs, as long as they do not copy. Things would be different, if an author re-creating certain existing functionality would have access to parts of the source code. This was however not the case here.¹⁸⁷

The court also mentions that whether or not the programming language or data files are their author’s own intellectual creation and thus potentially protected under Directive 2001/29 does not matter in this regard. Thus, because on the facts, there was no access to source code, and no attempts to decompile¹⁸⁸ the program were performed, for the purpose of the protection under Article 1 (2) of Directive 91/250, the programming language or the data format used are not an expression of the program per-se, and thus are not protected under the Directive.¹⁸⁹

As mentioned above, question six and seven then raised the question whether a user of a lawfully purchased program can observe, test or study the functionality of that program to learn about the ideas and principles behind it, or whether this can be prohibited by acceptance of the license that the use of the program entails.¹⁹⁰

¹⁸⁶ *ibid.* para. 40; Weston (n 184). p. 442.

¹⁸⁷ *SAS Institute Inc. v World Programming Ltd.* (n 10). para. 43.

¹⁸⁸ *Microsoft v Commission* (n 141).; Definition: Reconstruction of quasi-source code from object-code, resulting in a more human-readable format than direct object-code; Weston (n 184). p. 440; Vinje (n 14). p. 255-256.

¹⁸⁹ *SAS Institute Inc. v World Programming Ltd.* (n 10). para. 46.

¹⁹⁰ *ibid.* para. 47.

The court first holds that on the facts, it is established that the defendant in the main proceedings held valid licenses for the copies of the program that it evaluated.¹⁹¹ Pursuant to the High Court that referred the question, the defendant thus used the program in a way that was outside the scope of its license and subsequently would like to know whether the exception of Article 5 (3) of Directive 91/250 can be relied upon.¹⁹²

Here, the Court of Justice of the European Union then clarifies that pursuant to the wording, every licensee can freely observe, study or test a program he is allowed to use, to gather information about the ideas and principles the program is based on. Those ideas and principles are not protected by copyright on purpose, and this is hence consistent with the object of protection set out in Article 1(2) of the Directive. In addition, any license terms to that end are void, pursuant to Article 9 (1) of Directive 91/250. Both points mentioned above are also elucidated in recital 18 and 17 respectively.¹⁹³

In case there would have been decompilation within the meaning of Article 6 (2) (c) of Directive 91/250 things could have been different if the resulting program would be held to be 'substantially similar' in its expression. This was however not the case, based on the facts.¹⁹⁴

As a result, the Court of Justice of the European Union answered those two question by stating that a person with a valid license for a computer program can, without further authorisation by the copyright owner, observe, test and study said program to determine its functionality, ideas and principles of any of its elements, such as protocols, data formats or programming languages, as long as the exclusive rights of the owner are not infringed.¹⁹⁵

By questions eight and nine, the Court of Justice of the European Union answers the questions of the lower court, to what extent the use or reproduction of certain elements of the manual of a computer program in

¹⁹¹ *ibid.* para. 48

¹⁹² *ibid.* para. 49; Vinje (n 14). p. 253-254.

¹⁹³ Directive 91/250/EEC on the legal protection of computer programs (n 19). para. 18, 17; Weston (n 184). p. 440-442.

¹⁹⁴ *SAS Institute Inc. v World Programming Ltd.* (n 10). para. 60; Vinje (n 14). p. 255-257.

¹⁹⁵ *SAS Institute Inc. v World Programming Ltd.* (n 10). para. 62; Weston (n 184). p. 441.

another computer program or the manual to it constitute an infringement under Article 2 (1) of Directive 2001/29.¹⁹⁶

To this end, the court states that as an expression of the intellectual creation, all parts of a work enjoy protection, pursuant to Case C-5/08 *Infopaq International*.¹⁹⁷ Furthermore, it holds that while the singular parts that make up the syntax, commands, options, iterations, words, figures or mathematical concepts are not protected, when these are put together by an author in an express manner and make up the manual (the intellectual creation), they are protected.¹⁹⁸

Hence, the last two questions are answered by saying that a reproduction of certain element of a manual in another manual or computer program can be an infringement as in Article 2 (a) of Directive 2001/29, if the reproduction is not an expression of the intellectual creation but of that of the other manual.¹⁹⁹

When the case went back to the High Court, it concluded exactly as before, finding only partial infringement for certain parts of the manual that were too similar but dismissing all other claims related to the data format or the language.²⁰⁰ In the process, it found any license terms to the contrary to be void.

In the light of a focus on interoperability, the partial infringement could be considered problematic, especially when looking at the reasoning used.²⁰¹ While the judge comes to the conclusion that there was no intentional copying, and does not find the 'WPS Guides' to be infringing, he holds part of the 'WPS manuals' to be infringing, because some of the language is similar. There might be a reasonable argument because the writers admitted that they sometimes looked at the SAS manual while working. Still, similar language used can, especially when describing syntax that should have the same function, always be explained by the same or very similar

¹⁹⁶ *SAS Institute Inc. v World Programming Ltd.* (n 10). para. 63.

¹⁹⁷ *Infopaq International A/S v Danske Dagblades Forening* [2009] C-5/08, [2009] I-06569 (Court of Justice of the European Union).

¹⁹⁸ *SAS Institute Inc. v World Programming Ltd.* (n 10). para. 65 & 66; *Weston* (n 184). p. 442.

¹⁹⁹ *SAS Institute Inc. v World Programming Ltd.* (n 10). para. 69 & 70.

²⁰⁰ *SAS Institute Inc v World Programming Ltd* (n 10). para. 79-81 & 52-53.

²⁰¹ *SAS Institute Inc v World Programming Ltd.* (n 10). para. 148.

functionality being described, so that necessarily the same names, with the same options are described.

4.4.4. Conclusion

This case is of crucial importance for all businesses or individuals who create programs that require some degree of interoperability. Specifically open-source projects, but also proprietary products.

In many cases, where under competition law a company is, based on freedom of contract, free to deny cooperation to create a compatible, interoperable product, from a consumer or business point of view, an interoperable product is still desirable or even indispensable.²⁰²

If general concepts, ideas or their composition into a specialized programming language or data format would be covered by software copyright, this would preclude businesses or individuals from developing and distributing innovative software, without asking special permission. Examples for this are program libraries that access iTunes or iPod/iPhone database files or programs such as Libre Office that can edit Microsoft Office files, both without having access to the relevant source code, instead relying partly on specifications, but mostly on observing, testing and analysing the original program and data format.²⁰³

This was and still is especially important for Free and Open Source Software. When free and open source software first came up, with the market share of Microsoft Windows on the client-side and small to medium servers, and alternate Unix vendors on small to big servers, it had a tough time. To gain any kind of interest beyond the purely enthusiast based crowd, Free and Open Source Software such as Linux or Samba (at issue in the Microsoft case) had to gain at least a minimal amount of compatible, interoperable functionality. Especially with many additional hurdles that can exist, such as patents, allowing copyright to extent to ideas, principle,

²⁰² Elkin-Koren and Salzberger (n 11). p. 205-207; Weston (n 184). p. 431-434.

²⁰³ *ibid.* p. 428-430; Elkin-Koren and Salzberger (n 11). p. 207.

functionality, data formats or protocols would have been a terrible blow to interoperability.²⁰⁴

4.5. Hispalinux complaint

There was a tendency in popular literature to see the behaviour of Microsoft in the case discussed above as a thing of the past. That not only Microsoft but also most IT companies in general were more open today and did not use their market power to hinder interoperability or to foreclose the market as in the past. While it is true that most companies are not in such a dominant position as Microsoft was, and as such have much lower chance to successfully use a similar tactic, similar practices are still used today, mostly by Microsoft itself.

4.5.1. Facts / Technical Background

On March 26th 2013, the Spanish association of Linux users ‘Hispalinux’, brought a complaint against Microsoft to the Commission based on Microsoft’s introduction of ‘UEFI’ technology.²⁰⁵

This is a replacement for the so far (and still) used ‘BIOS’²⁰⁶ system used in x86²⁰⁷ based personal computers (except Apple computers), that consists of the very first software that is initialized when a personal computer is started. This software initializes the hardware and devices that a personal computer is made up of or connected to and loads basic settings regarding these devices and is responsible for important low level constants such as the internal clock.²⁰⁸

²⁰⁴ Free Software Foundation Europe (n 110).

²⁰⁵ Jon Brodtkin, ‘Microsoft accused of locking out Linux in EU antitrust complaint’ (2013) <<http://arstechnica.com/information-technology/2013/03/microsoft-accused-of-locking-out-linux-in-eu-antitrust-complaint/>> accessed 23 May 2013.; Appendix A & B.

²⁰⁶ See § 3.1.

²⁰⁷ A kind of processor architecture used in all desktop computers today, originally pioneered by Intel.

²⁰⁸ Vinje (n 14). p. 251-252; Vincent J Zimmer, ‘Platform Trust Beyond BIOS: Using the Unified Extensible Firmware Interface’ [2009] Security and Management 351 accessed 10 May 2013. p. 1.

So far, while the ‘BIOS’ system has been around for a long time without significant improvements, there are multiple competing implementations by different manufacturers. These are generally selected by an OEM manufacturer or the manufacturer of the mainboard, as that is where the chip that contains the ‘BIOS’ system is located. Independent of which implementation is used, the means by which operating systems or other pieces of software can communicate with the BIOS are well known by now and for the most part allow all operating systems equal access.²⁰⁹

The UEFI system is now intended as a replacement for ‘BIOS’. This in itself is not a problem, however it also introduces a feature heavily pushed by Microsoft, called ‘Secure Boot’. This should create a trusted chain of code through a method called ‘signing’, where each piece of code that is executed has to be signed by a unique key that is controlled by Microsoft. It is envisioned so that in case a malicious program tries to infiltrate or replace a certain part in the chain of programs that are loaded when the computer starts up, it could not have a valid signature and the operating system could then detect this and either refuse execution or replace the infected part with a clean version. Whether it will be effective once it is widespread is up for debate.²¹⁰

As said above, this was heavily pushed by Microsoft and to achieve the ‘Works with Windows 8’ certification that can be important in the market, manufacturers must make sure to have Secure Boot enabled by default, although at least for x86 compatible computers, Microsoft recommends that Secure Boot can be disabled or be put into ‘custom mode’.²¹¹

As a result of this replacement, in a system where UEFI is used according to Microsoft’s specifications, there are two ways to run a non-Microsoft operating system on an x86 computer. One is to disable the secure boot function or set it to ‘custom mode’. It is however up to the manufacturer to

²⁰⁹ Vinje (n 14). p. 251-253; Jeremy Kerr, Matthew Garrett and James Bottomley, ‘UEFI Secure Boot Impact on Linux’ (Redhat, Canonical 28 October 2011) accessed 24 May 2013. p. 1-2.

²¹⁰ Hispalinux, ‘Amended verified complaint’ (Brussels 26 March 2013) HT.3591 accessed 23 May 2013. p. 3; Kerr, Garrett and Bottomley (n 209). p. 207.

²¹¹ Hispalinux (n 210). p. 4-5.

decide if, when or where this is possible. In addition to this, it is not possible to use the potential benefits of secure boot with this method.²¹²

The second method consists of using a small, minimal boot loader (shim) that was developed and signed, which then either loads unsigned code or signed code. When loading unsigned code this at least makes it possible for Linux users to use their systems almost as before, although it still is a significant burden especially for people who like to have full control over everything running on their system.²¹³

Hispalinux now complains about two things, which pertain mainly to users of free and open source software or other operating systems that are not from Microsoft. Namely, that the requirement that Secure Boot be enabled on OEM machines and on ARM machines is anti-competitive and obstructive. While it is true that in the meantime solutions have been derived that work to some extent, there can still be competitive issues, as the solutions currently available depend entirely on the goodwill of Microsoft or the manufacturers.²¹⁴

It should be observed that the market for client-side computer is despite the still existent dominance of Microsoft Windows not the same today as it was during the time of the Microsoft case. In addition, especially in the mobile space, similar practices are quite common. Still, in the computer market as a whole, no single manufacturer has the same market penetration or history as Microsoft, or would have had the power to dictate its rules to manufacturers of generic OEM computers or generic hardware.²¹⁵

So far, the Commission did not feel the need to take action on its own. Currently the complaint by Hispalinux is still under investigation by DG

²¹² *ibid.* p. 5-6; Peter Bright, ‘Windows 8’s locked bootloaders: much ado about nothing, or the end of the world as we know it?’ (17 January 2012) <<http://arstechnica.com/information-technology/2012/01/windows-8s-locked-bootloaders-much-ado-about-nothing-or-the-end-of-the-world-as-we-know-it/>> accessed 24 May 2013..

²¹³ Hispalinux (n 210). p. 6.

²¹⁴ *ibid.* p. 6-7.

²¹⁵ *ibid.* p. 6-7; Kalmó and Scopelliti (n 13). p. 3.

Competition and DG Connect.²¹⁶ On request, the Commission confirmed the complaint by the association, but did not want to comment any further.

§5. Data points regarding interoperability/switching costs

To illustrate the effects that network effects and associated switching costs can have in the ICT market, especially when it involves software, relevant data from six papers will be examined. These papers take different angles on the occurrence of network effects and the software market.

In 2004, Bitzer posited a paper in which he analysed the competition between computer operating systems, with specific regard to the market entry of the open source operating system Linux on the market for server operating systems.²¹⁷ He held, that normally, the software market tends to favour the emergence of natural monopolies, such as the IBM PC Bios, Intel's x86 processor architecture or the Microsoft Windows operating system.²¹⁸

To then analyse what happens in case of a new market entrant, he used a Launhart-Hotelling model, though due to the mostly free availability of Linux instead of comparing price data he conducted a real world test. In the model, Windows and Linux were included but also other incumbents that produced variants of Unix compatible systems (of which Linux is one) and Apple OS X. This model showed that a key factor was heterogeneity, or lack thereof.²¹⁹ As the old incumbents producing variants of Unix had little product heterogeneity compared to Linux and they all even supported Linux, it was easy for users to migrate to Linux.²²⁰ Heterogeneity is significant when compared to any versions of Windows for server however. Bitzer also included Mac OS X by Apple as benefitting from heterogeneity in the server operating system market, this however was misguided, as OS

²¹⁶ Appendix A; Appendix B;

²¹⁷ Bitzer (n 11).

²¹⁸ *ibid.* p. 370-373.

²¹⁹ *ibid.* p. 379.

²²⁰ *ibid.* p. 376.

X is also Unix compatible, being derived from BSD.²²¹ While he would be right in regard to the desktop market where heterogeneity between Linux or Windows and OS X is significant, in the server operating system market the factors that contribute to heterogeneity are less important, as evident by the fact that Apple no longer sells OS X server as a separate operating system and also discontinued its line of server hardware. Instead, the server components not already included with OS X 10.8 are sold as an add-on package for 19.99 \$, down from 499 \$ for a license to OS X Server 10.6.²²²

Hence, Bitzer concludes that long-run survival of proprietary products in head-to-head competition with free and open source software depends on heterogeneity.²²³ This result fits well to the non-consumer market that was surveyed, for consumer markets it would be too simple.

Related to these results, Goode conducted a survey among the Australia's top 500 publicly listed firms, to find out how many of them had heard of Free and Open Source software and subsequently considered it for their business.²²⁴ The results from the survey indicated that up to a third of respondents did decide against using Free and Open Source Software at least in part because switching from a commercial, proprietary platform would mean significant costs to achieve interoperability and certain past investments would be lost.²²⁵ Interestingly, certain respondents explicitly stated that they were already 'committed' to a certain proprietary solution, independent of the merits of other solutions.²²⁶ This could be an indication that even in a homogenous environment, when it comes to actual adoption of interoperable solutions, such as those using free and open source software, simple interoperability is not enough. Related to this, a paper by Lin in 2008 found that only because there often no direct licensing costs,

²²¹ *ibid.* Table 4.

²²² Andrew Cunningham, 'Server, simplified: A power user's guide to OS X Server' (29 July 2012) <<http://arstechnica.com/apple/2012/07/the-server-simplified-a-power-users-guide-to-os-x-server/>> accessed 24 May 2013.

²²³ Bitzer (n 11). p. 379.

²²⁴ Goode (n 11). p. 657-676.

²²⁵ *ibid.* p. 677.

²²⁶ *ibid.* p. 676.

this is not enough for non-proprietary alternatives to be chosen.²²⁷ For this, according to his observations additional flexibility, performance and a favour for customization is necessary. This fits nicely with the results seen by Goode in 2005, as he also saw a difference depending on the size of the firm and thus the IT expertise it had on staff, as a firm that already employs experts that can work with Unix variants will be able to switch to a Unix based alternative much more easily.²²⁸

More recently, Lanzi in 2009 presented a model describing competition in the market with regard to open source in a case where it is assumed that there is perfect software compatibility.²²⁹ Although this is of course a big assumption and unlikely to be true very often, it could be said that the situation has gotten better compared to the 90s and it can in any case be helpful to understand the dynamics of the software market. In his model, the market entry of free and open source software into a monopolistic software market can increase the quality of proprietary software through an imitative effect and decrease its price.²³⁰ In case of large network effects²³¹ that create lock-in however, the price of proprietary software increases in this model. The same market conditions were also observed by Yu, due to the ‘durable’ nature of software and its interdependency, when analysing predatory pricing in the software market.²³²

Hence, a shared model is likely to emerge, in the absence of too strong lock-in effects. Additionally, Lanzi agrees that in cases of only partial interoperability or no interoperability at all, loss of data or costs for converting this data arise as additional switching costs. This can be either between proprietary software and free and open source software or different proprietary software.²³³

As a result, Lanzi holds that even for users of proprietary software, market entry of free and open source software often has a positive effect. Unless

²²⁷ Lin (n 11). p. 79.

²²⁸ Goode (n 11). p. 676-677.

²²⁹ Lanzi (n 11). p. 192-193.

²³⁰ *ibid.* p. 198.

²³¹ *ibid.* p. 199.

²³² Qiang Yu, ‘Software predatory pricing and competition law - assessing below-cost prices’ accessed 29 September 2012. p. 11.

²³³ Lanzi (n 11). p. 199.

switching costs are too great, then these have a negative impact on new market entrants and can even increase the price of the incumbent software.²³⁴

Lastly, an interesting study regarding the benefits of interoperability with special regard to open-source software was conducted by Hicks in 2007.²³⁵ He observes that in the past compatibility was ensured mainly through industry-standards.²³⁶ In a world with more and more different platforms and devices, this is not enough anymore. This is especially relevant to free and open source software, as for free and open source products to get established in the market, they are dependent on the possibility of interoperability. Interoperability can however also be beneficial to traditional companies.²³⁷ Hicks gives the examples of Apple making iTunes compatible with Windows to drive adoption of the iPod, Sun's development of the cross-platform compatible Java to oppose Microsoft's dominance or IBM's support of Linux after the failure of its operating system OS/2.²³⁸

Taken together, the studies presented above present the economic underpinnings to the market structure in the software market. The resulting picture is very similar to the one found by the Commission during its investigation for the 2004 Decision against Microsoft and subjectively seems consistent with the current market structure.²³⁹

While naturally this presents challenges to incumbents, the results of the studies and many companies that offer proprietary applications or services today on top of open source software show, that even in a case of perfect interoperability and zero fixed costs, not all market participants will chose the open source version, so that there is a place for both business models.

§6. Analysis: importance of interoperability

²³⁴ *ibid.* p. 198.

²³⁵ Hicks and Pachamanova (n 3).

²³⁶ *ibid.* p. 316.

²³⁷ *ibid.* p. 319.

²³⁸ *ibid.* p. 319.

²³⁹ Komninos and Czapracka (n 13). p. 83-84.

At the inception of the intellectual property system, while an important part was the protection of creators and innovators and giving them an incentive to continue, an equally important part was ensuring that for the rights granted to creators, society in return received benefits such as society being able to obtain copies of the works or otherwise reap the benefits.²⁴⁰ In a world where lobby groups tend to push for ever-stronger copyright enforcement and longer protection, this balance is under stress. Most importantly, this also meant that ideas and processes cannot be protected. This is the basis for interoperability.²⁴¹

The importance of this becomes apparent when looking at the intersection of intellectual property law and competition law on the European Union level, especially in the ICT/software market. One example for this is the concept of interoperability. In the same way that copyright holders feel that it is harder for them to enforce their copyrights, it is easier and more tempting than ever to create non-interoperable networks then enforce a lock-in effect, which then can present competition law problems.

The Magill case was the first significant case that dealt with the intersection of copyright and competition law on the European Union level.²⁴² In this case, TV broadcasters in Ireland did not freely distribute weekly listings of their programs, forcing consumers to buy the broadcaster's own publication if they wanted a weekly listing. The court held, that while in principle a copyright holder has every right to control the reproduction of its own data, this does not mean that copyright holders are immune to the rules of competition law. Not only were the defendants naturally the only suppliers of their data, but they objected to other entities using this information to produce a product that would compete with their own products.

²⁴⁰ Matthias Leistner and Gerd Hansen, 'Die Begründung des Urheberrechts im digitalen Zeitalter Versuch einer Zusammenführung von individualistischen und utilitaristischen Rechtfertigungsbemühungen' (2008) 2008 Zeitschrift der Deutschen Gesellschaft für Gewerblichen Rechtsschutz und Urheberrecht (GRUR) accessed 4 May 2013. p. 479.

²⁴¹ Elkin-Koren and Salzberger (n 11). p. 239 & 205-207.

²⁴² *Radio Telefís Éireann (RTE) and Independent Television Publications Ltd (ITP) v Commission (Magill)* (n 84).; There was also Case C-418/01 *IMS Health GmbH & Co. OHG v NDC Health GmbH & Co. KG*, but the content there is too far out of the scope of this case.

The court thus held that as the defendants had a dominant position, segregated the market and were exercising their copyright in such a way that it was manifestly opposed to then Article 86.²⁴³ Crucially, the Court of Justice held the Commission was right in its finding, as the exercise of copyright did not serve the protection of copyright itself, but the protection of a business model detrimental to competition.²⁴⁴

This was an important judgement, as it marked a point where the Court of Justice held that especially regarding data or text that was otherwise licensed and made available, copyright should not be used to segregate the market or distort competition. This was also followed in other countries, as can be seen by a case that followed shortly afterwards in Germany.²⁴⁵

The Microsoft case saga then brought the case law concerning the intersection between intellectual property law and competition law directly to the software market.

After the Commission's investigation, it agreed with the complainant that Microsoft had unfairly abused its dominant position to introduce new proprietary extensions to previous protocols and interfaces, breaking interoperability and distorting the market.²⁴⁶

While normally all inventors and copyright holders should be entitled to earn respect for their work, the lengthy proceedings spanning 14 years are a good example to give an example of a copyright holder trying everything to continue its abusive practices. This became obvious when it was claimed during the proceedings that only providing interface specifications would somehow compromise the source code of Microsoft Windows, allow competitors to imitate Windows or when almost none of the supposed innovations that Microsoft claimed the information it had to provide was based on, were characterised as actual innovations/inventions.²⁴⁷ It should be kept in mind, that this is not something the Commission just came up

²⁴³ *ibid.* para. 57.

²⁴⁴ *Pilny* (n 84). p. 957.

²⁴⁵

²⁴⁶ Commission Decision relating to a proceeding under Article 82 of the EC Treaty (Case COMP/C-3/37.792 Microsoft) (n 9). Rec. 542-791.

²⁴⁷ *Barazza* (n 13). p. 56.

with, most of the ‘ideas’ or concepts under analysis were actually based on older non-proprietary standards such as Kerberos and only slightly modified or if not, were not worth anything as equivalents were licensed in the marketplace on a royalty-free basis.²⁴⁸ Hence, as was held in the case, the value of these so-called innovations was not in their unique character or inventiveness, but their strategic value, which is not protected by copyright, so that in the sense that Microsoft’s intellectual property rights would still be infringed, this was justified under competition law.²⁴⁹

This was an issue in the case much longer than it should have been, as not only Microsoft litigated for a prolonged time, but the Commission actually had at first not complained about Microsoft licensing the interoperability information on RAND terms. Shortly after giving Microsoft leeway due to the pending appeal, it objected to Microsoft’s action regarding the disclosure of information as the fee would have had to be paid on per-user basis.²⁵⁰ This would have been impossible to comply with for a free and open source project and the fact that a licence would have cost more than a copy of Windows 2000 with the functionality included. As such, acceptance of those terms would not only have made it impossible for the Samba Team to support the newer features but also made it impossible for any commercial entities to market a viable product.²⁵¹

Finally, especially when considering the technology market today, it seems that often companies try to get away with monopolistic behaviour, such as seen in the Microsoft case and there are a lot of incentives for it.²⁵² This can take the form of a monopoly on one market being used to establish a monopoly or behaviour detrimental to competition on a second market, as was the case in the Microsoft case as well, where the Commission and the Court saw it as a *Tertra Pak II* situation.²⁵³

²⁴⁸ Commission Decision relating to a proceeding under Article 82 of the EC Treaty (Case COMP/C-3/37.792 Microsoft) (n 9). Rec. 153.

²⁴⁹ Barazza (n 13). p. 58.

²⁵⁰ *ibid.* p. 55.

²⁵¹ Free Software Foundation Europe (n 110).

²⁵² See: §5.

²⁵³ Commission Decision relating to a proceeding under Article 82 of the EC Treaty (Case COMP/C-3/37.792 Microsoft) (n 9). Rec. 527.

In the Microsoft case, Microsoft had claimed infringement of their intellectual property; however this was not a very convincing argument as it turned out.²⁵⁴ While there was a distinction as to what actually constituted an innovation and what did not, the answers regarding the scope of software copyright were thin, and they were easily dismissed. These findings, as presented above go well together with the economic models presented in §5. This is especially true for the market description of the software market, which tend to favour a monopolistic incumbent due to large network effects and the importance of interoperability to lower heterogeneity so that new market entrants, be they commercial or free and open source software, can emerge.²⁵⁵

This changed however with the SAS case and its precursor BSA.²⁵⁶

Both cases had in common that they dealt with the scope of software copyright pursuant to Directive 91/250. In BSA it was held that the image of a graphical interface of a computer program is not protected under the protection of Article 1 (2) of Directive 91/250, similar to the *Lotus v. Borland* case in the US.²⁵⁷ BSA however is a bit out of the ordinary, as it did not involve interoperability or litigation by a copyright holder, but an industry association that requested the authority to collect royalties for the reproduction of computer software interfaces on TV screens. As pointed out in the case before the Czech administration, for generic business applications such as file managers, word processors or accounting tools, this does not make much sense.²⁵⁸ Other works such as texts, audio recordings, images, movies or audio-visual creations are already protected separately and in case of imitation, a case can be brought under unfair competition law as well. In the questions before the Court of Justice of the European Union however, it came down to the scope of the expression of software protected under Article 1 (2). The court decided that the graphic user interface of a

²⁵⁴ Komninos and Czapracka (n 13). p. 89-90.

²⁵⁵ Network effects: Lin (n 11). p. 70.

²⁵⁶ Marly (n 174).; Weston (n 184).

²⁵⁷ *BSA (Bezpečnostní softwarová asociace – Svaz softwarové ochrany) v Czech Ministry of Culture (Ministerstvo kultury)* (n 160). para. 34-42. Marly (n 174). p. 207; *Lotus Development Corporation v. Borland International, Inc.* (n 161).

²⁵⁸ *BSA (Bezpečnostní softwarová asociace – Svaz softwarové ochrany) v Czech Ministry of Culture (Ministerstvo kultury)* (n 160). para. 18.

program does not constitute part of the expression of that program, especially as there is no interactive part in a display on television.²⁵⁹ For the reasons given above there is also not gap in the protection of intellectual works. Instead, for compatibility and interoperability reasons, as in the US case *Lotus v. Borland* it is important for interoperability and compatibility in the technology world to allow similar graphical user interfaces and interoperable functionality, while avoiding imitation.²⁶⁰

Even more important for defending the concept of interoperability and defining the scope of software protection under Directive 91/250 was the SAS case.²⁶¹ It arose from a dispute between two software companies, developing business analytics software, where World Programming had enabled its new product entering the market with the ability to run scripts written for the incumbent product by SAS in its special programming language and also incorporated interoperability with SAS' file format. This made it much easier for potential customers using SAS' software to switch to its competitor, as they were able to use some or all of their files with the new product. Based on the findings of fact by the lower court, the defendant had had no access to source code or object code of SAS.²⁶²

The referring high court sought answers from the Court of Justice of the European Union regarding the scope of software protection under Directive 91/250, especially as to how far implementing functionality for interoperability purposes could be a breach of copyright, and in how far it mattered whether an otherwise lawfully licensed program was used in a way outside the scope of its license for the purpose of interoperability.²⁶³

When stating the basic scope of copyright protection for software programs, the court referred to BSA mentioned above, but then expanded on it. As the referring court had already concluded before referring, the Court rightly concluded that as a matter of principle the functionality of a computer program is not protected by copyright.²⁶⁴ Because of this, the functionality

²⁵⁹ *ibid.* para. 50-51.

²⁶⁰ *Marly* (n 174). p. 207-208.

²⁶¹ *SAS Institute Inc. v World Programming Ltd.* (n 10).

²⁶² *SAS Institute Inc v World Programming Ltd.* (n 10). para. 3.

²⁶³ *SAS Institute Inc. v World Programming Ltd.* (n 10). para. 28.

²⁶⁴ *Weston* (n 184). p. 435-436.

itself is not protected under Article 1 (2) of the Directive, as it does not qualify as an expression of the program. Furthermore, the court holds that all licenses users of a program have the right to ‘observe, study or test’ a program they use in line with Article 5, to gather information about how it works and this cannot be restricted by license terms pursuant to Article 9.²⁶⁵ This includes the programming language and the data format. This is of particular importance for interoperability, as both programming languages and an accompanying data format present one of the core constructs of computer software. Thus, if these would be afforded special protection, a market participant with enough influence create a new language and data format or buy the rights to an existing one, and then proceed to lock out everyone else or force them to pay a heavy toll. The ruling also should not have come as a surprise, while although the wording of some of the Articles might not always be precise in its meaning, the recitals make it much clearer and already at the inception of the Directive in 1992, Vinje explained the scope of protection in consistence with the SAS ruling.²⁶⁶

With the more popular programming languages, this is not even a question as the idea is normally that as many people use it as possible, which includes building alternative tools that use the language. One example of this is the popular ‘gcc’ compiler that was one of the first big projects of the free and open source movement, which implemented a free interpreter for the ‘C’ language that then helped build Linux.²⁶⁷ While there exist different standards and a standards body, this is only so it can be easily ascertained which syntax and features are supported by a certain compiler or source code.

A newer example of a language developed by a commercial company on its own is that of C#, which was developed in conjunction with a set of accompanying libraries (.NET) by Microsoft.²⁶⁸ For interoperability, open source developers and related companies then created ‘mono’ an

²⁶⁵ *SAS Institute Inc. v World Programming Ltd.* (n 10), para. 46.

²⁶⁶ Vinje (n 14), p. 253-254.

²⁶⁷ Brian W Kernighan and Dennis M Ritchie, *The C Programming Language* (Prentice-Hall 1988), p. 10.

²⁶⁸ Microsoft, ‘Microsoft .NET Framework’ (2013) <<http://www.microsoft.com/net>> accessed 24 May 2013.

implementation of .NET that could run on non-Microsoft operating systems such as Linux or Apple OS X.²⁶⁹ Similarly, Google also used the popularity of the Java language to its advantage when establishing the ‘Android’ operating system for mobile devices. For this, it also developed a new implementation of Java for Android.²⁷⁰ While the case was not entirely the same, when Oracle brought infringement proceedings against Google after acquiring the company that had originally developed Java and the accompanying interfaces and libraries, it was held that there was no infringement regarding the programming language and accompanying functionality.²⁷¹ All these examples could have played out quite differently and stifled important innovations if the mere functionality of a program, a programming language or data formats were protected as software under Directive 91/250. While at least so far, regarding software and as far Directive 91/250 is concerned, the achievement of interoperability, is not impossible, it remains to be seen what will happen in the future. A particular concern are DRM tools, which due to their goal to prevent circumvention are often afforded special legislative protection, and are used more and more pervasively to control platforms and market or to censor. One example of this ‘Secure Boot’, part of the IBM Bios replacement UEFI.²⁷²

To this end, there is currently a complaint against Microsoft before the Commission brought by the Hispalinux association as outlined before. As can be seen in Appendix A and B, DG Competition and Connect are investigating the complaint, but nothing else is known at this point.

§7. Conclusion

In the pages above, the concept of interoperability was examined from a variety of angles. It was shown that issues with regard to interoperability

²⁶⁹ Mono Project, ‘Mono .Net development framework’ (2013) <http://www.mono-project.com/Main_Page> accessed 24 May 2013.

²⁷⁰ Stefan Brähler, ‘Analysis of the Android Architecture’ (Studienarbeit, Karlsruher Institut für Technologie 8 February 2011). p. 3-4.

²⁷¹ *Oracle America Inc v Google Inc.* (2012) C 10-03561 WHA (United States District Court for the northern district of California).

²⁷² Kerr, Garrett and Bottomley (n 209).; Elkin-Koren and Salzberger (n 11). p. 207-213.

information could arise under competition law as well as under intellectual property law. In *Magill* it was held that competition law can impact intellectual property law. Most often, under competition law a public authority or a competitor will act against an undertaking, which it perceives to create unfair conditions in the market, such as in the Microsoft case. At least in this case, it also took a long time to litigate to the end. The time to get the relevant interoperability information released was not quite as long, but by the time that had happened, the only still relevant party was the Samba Project, developed as Free and Open Source Software. Nonetheless, this project is still around and put the information that was licensed to good use. The case was the first case on the EU level where in the area of software protection, a performance remedy was used as a sanction in competition law.

On the other hand, claims under copyright law, will be used by firms who feel that the copyright in their software was infringed. Such a case as SAS is not very likely to occur often, as when it is found that there was no access to source or object code, it would be very hard or impossible to prove that there was any infringement. As has been explained in the analysis, this was a very important ruling to clarify that the programming language and data format are not in themselves protected by copyright.

No matter what area of law a matter is examined under, based on the case law considered above and Directive 91/250, it can be deducted that interoperability information is an important concept recognized in the law of the European Union. It should however be pointed out, that despite the not too negative picture painted here, a lot of uncertainty remains for businesses and developers. This is especially so, when patents are taken into account or decompilation or reverse-engineering (special techniques for the analysis of software covered by Directive 91/250) has to be used, as it is quite hard to know when this is allowed and when not. Unfortunately, when developers or businesses then find out that someone believes they were not entitled to a certain analysis, it would likely be too late and they would have to just hope for the best and get a good lawyer.

As a result, while some safeguards to allow for interoperability have been built into Directive 91/250 and its national implementations, it should be ensured that this single digital market also takes special care to safeguard interoperability exemptions. So that free and open source software and competing software can continue to be interoperable or even expand interoperability, with less lock-in in a successful 'single digital market'.

§8. Appendix A

Florian Idelberger <florian.idelberger@gmail.com>

Hispalinux Complaint / Interoperability Research

Lucilla.SIOLI@ec.europa.eu <Lucilla.SIOLI@ec.europa.eu>
To: florian.idelberger.398@student.lu.se

Wed, May 15, 2013 at 11:05 AM

Dear Mr. Idelberger,

Thank you very much for your message.

Regarding your first question, we are unfortunately not able to comment on on-going complaints.

Regarding the second and third questions, pursuant to the Digital Agenda for Europe (DAE) action 25, the Commission services have examined "the feasibility of measures that could lead significant market players to license interoperability information" , which is outlined COM(2010) 245 final/2, p. 16 (<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2010:0245:FIN:EN:PDF>). A staff working document analysing measures that could lead significant market players in the ICT sector to licence interoperability information will be presented shortly.

Best wishes,

Lucilla Sioli

Head of Unit



European Commission

DG Communications Networks, Content, Technology

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§9. Appendix B

Florian Idelberger <florian.idelberger@gmail.com>

**Reply to your e-mail of 02/05/2013 - Our ref.: COMP/C3/MAd/se/HT.
3591/Bundle 2013/048017**

1 message

COMP-C3-MAIL@ec.europa.eu <COMP-C3-MAIL@ec.europa.eu> Thu, May 16, 2013 at 3:06 PM
To: florian.idelberger@gmail.com
Cc: COMP-GREFFE-ANTITRUST@ec.europa.eu

Dear Mr. Idelberger,

Thank you for your message of 2 May 2013 in which you refer to a submission that Hispalinux has sent to the Commission regarding UEFI and the introduction of Secure Boot by Microsoft Corporation.

Feedback from interested citizens is a very valuable source of information for us, which we take seriously and for which we would like to thank you.

We are currently analysing the submission you mention. We are, however, not in a position to comment on the status of on-going investigations of DG Competition.

We regret that we cannot provide you with a more positive reply. Please be assured again that consumer perceptions are nevertheless a valuable input for our daily work and an appreciated direct source of market knowledge.

Best regards,

BANASEVIC Nicholas
Head of Unit



European Commission
DG Competition – Unit C3

Antitrust - IT, Internet and Consumer electronics
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B-1049 Brussels/Belgium

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