

Open Source Software and Technological Innovation: Competitive Issues

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The new model of the products development and distribution represented by the open source movement has an important impact on the composition of the software market because it is a system alternative to the proprietary model. The antitrust analysis of the software market has to value, therefore, the strong effect of the open source development and distribution on the market contendibility and on the effectiveness to substitute the proprietary scheme. [JEL Classification: K21, L11]

1. - Introduction

The relationship between the two terms of the hendiadys, open source software and antitrust law, is both difficult to outline and hard to settle.

In order to specify the link between them, we will try to define the two different aspects of the question: the competitive contribution to software markets from the new model of the products development and distribution (i.e. OSS model) and the *rôle* played by the competition law on the development of OSS¹.

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¹ We will try, in particular, to make a direct compararison of the terms of the hendiadys, not in the antagonistic form — that is the field in which the lawyer practises his method — but rather with the common aim of an increase in competition.

First of all, we have to give a brief introduction to two general problems.

The first important problem is connected with the unsuitability of the “classic” antitrust law to deal, using traditional analysis tools, with the competitive issues concerning competition, which are peculiar to the software industry and the new markets based on Information Technologies. The second more specific but as delicate problem, regards the definition of open source software and its specific importance for the antitrust law.

2. - “Old” Antitrust and “New” Regulation on Information Technology Markets

The inadequacy of the antitrust law to understand the peculiarities of some of the new economy products and to give a correct evaluation of the issues concerning competition of the related markets, is not a new subject.

This was already stated, without success, by Microsoft in order to avoid the charge of monopolization brought against it by the US Government² and afterwards proposed by the same software house in the proceedings under Article 82 of the EC Treaty developed by the European Commission³.

The *rôle* of antitrust enforcement is still to verify, because still there are no decisions of antitrust Authorities as regards the competitive compatibility of the development and distribution systems defined open source. See, for remarks regarding this aspect, the *obiter dicta* of the decisions on the two Microsoft's cases, *infra*, notes 3-4.

² See, on the US case, Distict Court of United States, District of Columbia, April 3, 2000, *Foro it.*, 2000, IV, 229, with notes by RENDA A. (2000).

At first Microsoft Corp. was condemned to a compulsory division in two firms, for the production of operative systems and the carrying out of applications respectively. Afterwards Judge Jackson's decision – which was talked about a lot – was corrected by the Court of Appeal [US v. Microsoft, 253 F. 3d 34 (D.C. Cir. June 28, 2001)] and lastly, Microsoft and Department of Justice came to a consent decree, issued by Judge Kollar Kotelly on November 12, 2002 (available on the site www.dcd.uscourts.gov). On the inadequacy of old antitrust law in the regulation of IT markets, see RENDA A. (2004), where is a critical appraisal on the open source initiative with regard to the US Final Judgement.

³ See the text of the EU Commission's decision, March 24, 2004, available online at <http://europa.eu.int/comm/competition/antitrust/cases/decision/37792/en.pdf> (last

However, in this case, too, the question of contention has not yielded the expected result and has not prevented EC Authorities from condemning Microsoft for abuse of its dominant position on the market.

In the antitrust proceedings it was pointed out that, as regards markets with strong *network* and *learning* effects, like those we are dealing with, firms try to make “*de facto*” standards in order to get high and long-lasting market power⁴, with strong *tipping* effects against clients and producers of complementary goods⁵.

Under such circumstances, products, quickly becoming obsolescent, and the natural evolution of technical standards are factors unable to guarantee, on their own and without corrections, new comers’ entry into the market and a reduction in the market power, held by the standard’s owner, who can always rely on a strong advantage over the competitive pressure of new entrants.

The antitrust analysis, if correct, is able to understand and, if necessary, to correct the competitive dynamics of the software industry.

The problems related to the antitrust enforcement on these markets, are probably different: firstly, the very long times of the proceedings⁶ and secondly, the enforcement of effective remedies suitable for the seriousness of the infringement of the antitrust law.

The recent proposal to establish regulations on some aspects of the networks architecture and the use of operative standards — by analogy with what happens in the field of electronic

visited on August 22, 2005), especially at paragraph 456, where Microsoft’s allegations on the inadequacy of the structuralist remedy in order to regulate competition on the IT markets, are quoted.

For the critical notes on the decision under EC Treaty, see PARDOLESI R. (2004); PARDOLESI R. - RENDA A. (2004).

⁴ This is the case of the operating system Windows, which the Commission has defined “*not only the dominant product of the market, ... but the de facto standard operative system product for client PCs*” (Commission’s decision, March 24, 2004, *supra* note 3, paragraph 472).

⁵ See, Commission’s decision, March 24, 2004, *supra* note 3, and the critic notes of PARDOLESI R. (2004); for a competitive analysis of the network effects and the network dynamics, KATZ M.J. - SHAPIRO C. (1985).

⁶ The proceedings were begun by the European Commission and lasted more than 5 years and almost the same time was necessary to define the Settlement Agreement which has concluded the trial among Microsoft, US Government and some of the States of the Union. About it, see *infra*, paragraph 7.

communications — should be considered in a *de iure condendo* perspective⁷.

The experience achieved both in Italy⁸ and abroad⁹ on network services markets — for a long time now subjected to *ex ante* regulations — clearly shows the limits of a solely regulating intervention and the necessity of antitrust control cooperating with and completing the sectorial Authorities' one.

3. - Open Source Software Definition ...

The other preliminary question to deal with regards the definition of *open source* software and its significance for the antitrust law.

The interpreter can use the notion which is supplied on this subject by the interested people¹⁰ and which seems to coincide with the definition recently accepted by the European Commission in the Microsoft decision¹¹.

With software open source we mean all the software supplied and distributed on the basis that their source code is available and freely modifiable by the licensee. These programs do not seem to differ from proprietary programs (for instance Microsoft's operating system Windows) in their technical contents and the use they are designed for; rather, they are different from the

⁷ See PARDOLESI R. - RENDA A. (2004); PARDOLESI R. - GRANIERI M. - GIANNACCARI A. - COLANGELO G. (2004).

The point of balance between the two terms of the architecture (which defines the technical means) and of control (on the contents) could be established through an information policy which regulates, moreover, the restrictions based on intellectual property rights.

⁸ See, in Italy, *Telsystem/Sip*, *Boll.* 1-2/1995, leading case of a period of large use, from the Italian Authority, of the *essential facilities doctrine* also on markets, like that of the telephone service, which were regulated by a new law on privatizations; for an exhaustive analysis of this matter, see GUGLIELMETTI G. (1998).

⁹ See Supreme Court of United States, January 13, 2004, *Verizon Communications Inc. v. Law Offices of Curtis V. Trinko, LLP*, 124 S.Ct. 872 (2004) (No. 02-682) with the notes by GIANNACCARI A. (2004) and by OSTI C. (2004).

¹⁰ See for instance, the definition of *Free Software Foundation*, on the website www.fsf.org; the Foundation has also created the GPL license which regulates the distribution of the open source software: see *infra*, paragraph 3.

¹¹ See Commission's decision, *supra* note 3, paragraph 26.

proprietary model in the licensing method (distribution of open source, in fact, allows free redistribution of the software without royalties or other fees paid to the author. The source code is to be distributed with the software or otherwise made available, through download from Internet almost free of charges or at least at a price not higher than the cost of reproduction. The licence is also to allow anyone to modify the software or derive other software from it, and to redistribute the modified software under the same licence terms¹².

The many kinds of open source licences are characterised by some common elements, which are part of the well-known General Public License, created by the *Free Software Foundation*¹³, that is:

I) *availability and accessibility of the source code.*

The computer program must contain the source code and, in any case, the distributor must make it available, typically through *download* from Internet, at the same cost as that (tending to zero) of reproduction. The license must allow the distribution of the program both in the form of source code, and in the form of object code; the former is to be the elective form of the modification of the program, even if it is absolutely forbidden to black out the source code or make its modification more difficult.

II) *freedom of modification and redistribution.*

This is a faculty connected with the availability of the source code and it binds each user, who wants to redistribute the program (original or in the modified form) to preserve the power to use, modify and distribute the source code for the next users of the program.

It is clear that open source programs do not lack legal protection (*sub specie* of copyright), but their model of distribution is based on the rightful holder waiving the prerogatives granted to him by the copyright law.

¹² In any case, the term “free software”, often used (like) as a synonym of “open source”, does not mean that this kind of programs are distributed at no cost (“free as a speech, not as beer”), but it means that the powers which normally the author/developer owns, can be used by every user, without limits from the rightful holder, on the licence’s conditions.

¹³ The full text of GNU License is available online at <http://www.fsf.org>.

This result is achieved through the use of a particular class of licenses (i.e. *copyleft*)¹⁴ which contrast with those (called “proprietary”) based on the copyright exercise.

On the one hand these are suitable to promote (a large condision of) source code sharing of all computer programs which use — though only in part — open source software; on the other, they prevent the next users of the program or of derivative products, from appropriating these codes¹⁵.

The enforcement of the clauses of the contract — at present all to verify¹⁶ — is assigned, in many cases, to a third party, typically a non-profit organisation, which pursues the aim of promoting free software “ideology”. In the case of the *Free Software Foundation*, for example, the GPL’s programs developers transfer the copyright to the Foundation, which commits itself to exercise it in compliance with its istitutional aims¹⁷, in order that the next users of the program should keep the powers, granted by the licence, intact.

According to Professor Moglen, a very important theoriser of the legal issues of the open source movement, that should permit a better protection of the programs, especially when the authors

¹⁴ The more used and well-known licences are the already quoted *General Public License* — GPL — and the *Berkeley Software Development*, created by the homonymous University: see KENNEDY D. (2001); MCGOWAN D. (2001); FITZGERALD B. - BASSETT G. (2003).

¹⁵ The definition of derivative work referring to open source licences is amply discussed and the solution to this problem is very important for the future development of this kind of software: WEBBINK M. in FITZGERALD B. - BASSETT G. (2003).

¹⁶ The first case of application and intrpretation of such clauses was examined by the Tribunal of Munich, April 14, 2004, which prohibited the distribution, the reproduction and access to the *open source* software “netfilter/iptables” on terms other than those provided by the GPL license, and bound the next licensees to mention the GPL licence and to make the program’s source code available at the cost of reproduction. For notes on this case, see SHANKLAND S. (2004). The other important case which regards the effectiveness of open source licenses, is *SCO v. IBM, infra*, paragraph 9.

¹⁷ The scope of the Free Software Foundation is described in the organization’s website: “The Free Software Foundation (FSF), founded in 1985, is dedicated to promoting computer users’ right to use, study, copy, modify, and redistribute computer programs. The FSF promotes the development and use of free (as in freedom) software — particularly *the GNU operating system* (used widely today in its *GNU/Linux variant*) — and free (as in freedom) documentation. The FSF also helps to spread awareness of the ethical and political issues of freedom in the use of software”.

are more than one and the enforcement of the clauses in question requires a high degree of collaboration among the rightful holders¹⁸.

4. - ... and its Relevance to the Antitrust Law

The characteristics of open source programs and the distinction from the proprietary softwares, permit us to establish their relevance with the competition law. Particularly, we have to ask us if, and how, the models of production, development and distribution of open source softwares are to be considered with autonomous criteria under the one or the other of following sides: the relevant markets definition; the market shares computation; the other typical behaviours of open source sphere, among which the information exchanges and the under cost sales¹⁹.

As regards the relevant markets definition, the matter — difficult to deny — that the open source programs are not different, under the technical aspect, from those proprietary and tend to satisfy the same needs, on side of demand, doesn't exclude, on principle, that an autonomous product market can be pointed out.

In the Microsoft case, for instance, US judges have decided to exclude from the relevant market — in contradiction with the same substitution's criterion — the Apple operating system²⁰.

Moreover, competition's Italian Authority has recently settled that the services (in this case, *nella specie*, works coupons for the meal) given out by contract to the Public Administration is an autonomous market because of peculiar public rules which regulate the contractor choice and the contract drawing²¹.

Lastly, some forms of good production and distribution, above all when they affect the costs structure of the firms and its price

¹⁸ For more details on the Moglen's approach, visite the site <http://emoglen.law.columbia.edu>.

¹⁹ And, generally, of the software market.

²⁰ The application of the antitrust law is necessary, in this case, because the learning effects, typical of network economies, increase the consumer's costs for shifting to a new generation product of competitors: DENOZZA F. (2002).

²¹ Authority's decision n. 10831, July 13, 2002, *Boll. AGCM* n. 24/2002. See also COLANGELO G. (2003).

levels, contribute to outline a market sector at least partly distinct from that of the competitors products²².

However, this is not the conclusion reached by the antitrust Authorities, on the two sides of Atlantic, in the evaluation of the structure and the competitive dynamics of the software industry. All analysis regarding this matter agree to hold that — as stated by the European Commission in the Microsoft case — “*open source software has become an established feature of the mainstream software market*” and that the peculiar way of creating and using open source software, does not justify an autonomous evaluation from the point of view²³.

Besides, the two kinds of programs often cross each other and give rise to mixed products which incorporate parts of the proprietary software and open source components, in confirmation of the fact that the two kinds of programs compete on the same markets and that they are intended for the same customers, in spite of the great difference from each other as regards the modes of development, production and distribution.

The question is different as to the computation of market shares which refer to the firms which produce and/or distribute the open source software. As a matter of fact, in this case, the calculation of the sales can be misleading because, in many cases, the open source software — as we have seen — is given free of charge.

Antitrust Authorities, have therefore, reconstructed the fact in a way partially different from the traditional one, and have highlighted the product units actually installed (also free of charge) by the interested firms²⁴. The data resulting from the employment of this different criterion — even if probably underestimated because they do not balance the (many) copies of open source software downloaded free from the Web — are one way or another unexpected, at least to the outsiders: among the operating systems which run Internet’s web pages, for instance, *Apache* holds

²² Let’s think, for instance, of the great distribution field and of the *rôle* played by discounts.

²³ See FEDERAL TRADE COMMISSION (2003, chapter 3, at 44), for a close analysis of the mainstream markets.

²⁴ Commission’s decision, *supra* note 3, paragraph 473.

more than 60% of the market; *Linux*, probably the best-known of open source programs, holds 13,4% of the world-wide market share of the operating systems installed on *Work Group Servers*.

We must ask ourselves, lastly, if some typical conducts of open source industry operators should be considered separately if their conformity with the antitrust law is to be evaluated.

Let's think, on the one hand, of the information exchange underlying the creation and the development of the new open source software; on the other hand, of the free cession of this product and its compatibility of this conduct with the prohibition of predatory pricing.

Moreover, we cannot ignore the specific methods of enforcing the open source programs copyright, which are frequently transferred to a non-profit organization (for instance the Free Software Foundation) with effects not dissimilar, in substance, to those characterizing collecting societies.

With regard to the first aspect, mentioned above, we believe that, in the near future, an anticompetitive conduct with restrictive effects on relevant markets can be adopted by the firms that have a share in the open source movement, or the many organizations created to develop and support the programs which enable the users of open source technologies to develop classes of application based on standardized and open source-interoperative platforms. In particular, by promoting the open source software, these people can exchange information important for competition²⁵ or can conform

²⁵ It is possible to violate the antitrust law if competitors discuss or exchange information regarding: (i) individual company current or projected prices, price changes, price differentials, markups, discounts, allowances, terms and conditions of sale, or data that bear on prices, including profits, margins or cost; (ii) industry pricing policies, price levels, price charges, differentials or the like; (iii) changes in industry production, capacity or inventories; (iv) individual company bids or intentions to bid for particular products, procedures for responding to bid invitations or specific contractual arrangements; (v) plans of individual companies concerning the design, characteristics, production, distribution or marketing or introduction dates of particular products, including proposed territories or customers; (vi) matters relating to actual or potential individual suppliers that might have the effect of excluding them from any market or of influencing the business conduct of firms toward such suppliers or customers; (vii) individual company current or projected cost of procurement, development or manufacture of any product; (viii) individual company market shares for any product or for all products.

their conducts as to the development of products to market strategies or price levels²⁶.

We do not think, however, that these conducts must be evaluated using criteria different from the consolidated ones relating to facilitating practises and information exchange between competitors²⁷.

Equally, we ask ourselves if the subject that holds the rights of open source authors/developers is in a dominant position on the relevant market. If so, it must be established if and how from the subject there can be abuse condemnable under the antitrust law.

In any case, the criteria to deal with and solve those matters will not be different from those already used the powers and behaviours of the various collecting societies appointed to manage the author's royalties²⁸.

We must make some other remarks on the system of remuneration on which the method of development and distribution of open source software is based, in order to verify its compatibility with antitrust principles, in general terms, and in particular with the prohibition of predatory pricing. Seen from this angle, the open source model has some distinctive peculiarities: on the one hand we must explain the interest of the author of the program in making over, seemingly at no price, the results of his work to the community;

²⁶ See the antitrust policy formed by the Open Source Development Labs Inc., in order to make the illegal (competitive) conducts known to the open source developers: more information is available on the site www.osdl.org.

²⁷ See, the Italian Authority's decision, n. 8546, July 28, 2000, *Boll. AGCM* n. 30/2000.

²⁸ See CASSOTTANA M. (1995); in Italy, with regard to SIAE's activity, see the decision of Authority n. 3195, July 28, 1995, *Boll. AGCM* n. 30/1995. On the mutualistic function of the italian authors collecting societies, see the remarks of MARASA G. (1992), and those of SARTI D. (2001). The activity of the *Free Software Foundation* is giving services to the copyright holders and to the work users in order to enforce the rights in the case of limitation of the rights assigned by the open source licence model. The collecting society can hold a *de facto* monopoly, but the mandate to exercise the authors/developers rights is strictly functional to the effective enforcement of the contractual clauses which grant the free access and the free modification of the source code. Some aspects related to the economic exploitation of the work are on the contrary excepted from the Foundation powers: this fact limits greatly, and probably eliminates at all, the anticompetitive risks of the collecting system of right's exercise in the field of the open source softwares.

on the other hand, it is not clear what is the gain of the firms which trade in this software.

There is an answer to both questions.

First of all, the choice of the program's author not to make over his work to the community has a fairly high cost (i.e. the *synchronization cost*), rising from the need to adapt the program to later changes made by other developers.

In this perspective, "*it can be consistent with a Nash equilibrium to make improvements and to make those improvements available to others*"²⁹. Secondly, they are indirect economic revenues, which can derive from active sharing in the software open source development process (for instance, in the form of work opportunity or of other chances of gain) different from *royalties* but equally as interesting as those from the economic point of view.

Moreover, the companies which deal in open source programs, do not derive their gains from the sale of these products, but from the supply of counseling services (which include installation, personal adaptation and technical assistance) and from the sale of proprietary software connected to the use of open source technology. These firms do not supply (only) software, but (also and mostly) accessory services, for which they bear costs and get a corresponding price³⁰.

5. - Open Source and Development Models in the Software Industry: from the "Cathedral" to the "Bazaar"

The remarks made so far enable us to draw a first methodological direction of the method in order to correctly plan the study of the relationship between the open source software and the antitrust law: the open source is an alternative development model for the creation and dissemination of computer technologies, but

²⁹ DWYER G.P. JR., (1999); for more appraisals see also PRASAD G. (2001).

³⁰ For a specification of the Red Hat's business model in the Linux softwares distribution, see WEBBINK M. in FITZGERALD B. - BASSETT G. (2003) with more indications of business results of the firms.

as such it has neither, a specific *rôle* in antitrust issues, nor requires, as a rule, the use of a method or of concepts different from those used so far in order to analyse the competitive dynamics of the software industry. It is not from this point of view that the importance and originality of open source programs are pointed out under the competition law.

Their competitive importance is rather in the ability to offer the market and the public Authorities delegated to regulate it, a new pattern of promoting and developing the technological innovation, which, from its origins, purposes to overthrow the traditional model, based on the economic exploitation of intellectual property rights, to its foundations.

In the “manifesto” of the open source movement³¹, the ideological distance between the two models is powerfully delineated by the image of the cathedral (the proprietary software) and the bazaar (the open source software). But, in addition to the ideal and cultural purposes which vivify the open source movement, we want to outline the economic efficiency of this mechanism.

In this study we can neither *funditus* analyse the economics of the open source pattern, nor highlight the great difference, from the structural and operative aspects, from the proprietary scheme³².

However, the open source production model, in spite of general scepticism, is suitable to yield profits and stay on the market in the same way (and in the future, even better) as the products based on the exploitation of intellectual property rights³³.

On the contrary, we want to deal, with the subject of individuation and evaluation of the effects which this new model of software development can have on the order of related markets and in general, on the policy of Information Technologies competition. A few remarks are dedicated to these matters, as follows.

³¹ RAYMOND E. (1999).

³² See TIROLE J. - LERNER J. (2002); PAPPAS JOHNSON J. (2001); DWYER G.P. JR. (1999).

³³ See WEBBINK M. in FITZGERALD B. - BASSETT G. (2003).

6. - Evaluation of the Two Models in a Competitive Perspective. First Conclusions

In the field of the Software and Internet Industry the improvement happens, as everybody knows, in the form of incremental innovation, in which well-known elements are adapted or turned to different uses in a new functionality³⁴.

Moreover, the software industry is notoriously marked by the presence of network effects which enhance the product unitary value for the purchaser with the increase in total units sales³⁵.

The other peculiar feature of Information Technologies, is the trend to standardization, which consists in a progressive emerging of uniform technical features through which the dominant firm is able to consolidate its market power and to delay new competitors' entry into the market³⁶.

Each of the factors, above considered, is potentially suitable to narrow competition on the markets of which we are dealing with³⁷.

However, we cannot deny that the systematic exploitation of intellectual property rights in a protectionist way, delineated by the traditional model, considerably increase tipping risks and exclusionary effects, to the disadvantage of competitors and consumers, respectively.

As regards the "classic" model, the open source system — based on the use of the "copyleft" licenses which allow those programs to be used and modified by anyone free of charge — presents evident advantages also (but not only) from the point of view of competition.

In particular it shows how it is possible to stimulate technological innovation on the software market without playing on the

³⁴ SAMUELSON P. - DAVIS R. - KAPOR M.D. - REICHMAN J.H. (1994); FEDERAL TRADE COMMISSION (2003).

³⁵ The definition is in ECONOMIDES N. (2001).

³⁶ The IT markets standardization is a global problem of contemporary law: see, *i.a.*, LEMLEY M. - MCGOWAN D. (1998); PARDOLESI R. - RENDA A. (2000, p. 147); most recently, GIANNACCARI A. (2004).

³⁷ See, MELI V. (2003); BERTANI M. (2004) and — on Microsoft Commission's decision — PARDOLESI R. (2004).

economic exploitation of the artificial lead time, conceded to the holder of the exclusive right, but favouring the programs author inclined to interoperate among themselves in order to achieve new, more functional, applications.

This system brings clear advantages to competition.

On the one hand the open source software distribution can constitute the means of recovering (or at least of restricting) the installed-base opportunism which represents one of the less virtuous effects of standardization.

On the other hand, we cannot exclude that in dynamic competition the open source model becomes an effective way of encouraging research and development.

The fact that a program is distributed so as to making available the source code can, in fact, constitute, in a near future, strong means of collecting customers without excluding, in any case, that the range of undertaking's products can become rich of proprietary addictions, like applications or other instruments of documentation.

We can then conclude on this point affirming that the open source way is able to play an important pro-competitive rôle, whether because it is able to effectively oppose the restrictive effects coming from the use of systems based on proprietary software, or because it represents a valid alternative model to improve the technological innovation in information society, on line with the issues of an important study in regard to other sectors of scientific research³⁸.

The foregoing statements can be an interesting reading key both for the interpretation of the favour of the Government of many countries for the adoption of open source programs by their Offices³⁹; and for the interpretation of some recent evolution's trends in matter of abuse of dominant position which — although they do not concern directly the open source programs — can really involve their development.

We refer, on the one hand, to the decisions which have imposed to Microsoft some powerful obligations of disclosure for

³⁸ REICHMAN J. - UHLIR F. (2003).

³⁹ The legal acknowledgement of open source software in the different countries is delineated by HAHN R.W. (2002).

granting the full interoperability of its programs with those of competitors; on the other hand we refer to EU Court's decision on IMS case which confirmed the rule of European Authorities in the application of the essential facility doctrine to intellectual property rights and the possibility of considering that the right's holder refusal to supply a license can constitute an abuse under Article 82 of the EU Treaty.

7. - Impact of Recent Antitrust Decisions on Software Open Source Development

On weigh the impact of the above mentioned decisions in the open source software development, we must firstly recall, even if in synthesis, the content of the obligations imposed to Microsoft by the US Courts and, more recently, by the EU Commission, respectively.

In *US vs. Microsoft*, the engagements provided in the Final Judgement of November 2002 can be subdivided in two categories, according to whether they consist in a positive or negative obligation. Among the first ones, we must classify, first of all, the duty to make available, even if "*for the sole purpose of interoperating with a Windows operating System product*": a) all the *Application Programming Interfaces — APIs* — used by the Microsoft's Middleware to interoperate with a Windows operating system product (Sect. III.D); as well as b) the *Communication Protocols* installed on *client computers* and used to interoperate, or communicate, natively with a Microsoft server operating system product (Sect. III.E).

However, while Microsoft engages the duty *sub b)*, even for the "sole purpose" above mentioned, toward the "*third parties*" in general, that one related to the interfaces of applications is subjectively limited and objectively subordinated to a series of conditions such as to exclude — someone thinks deliberately — the open source developers from the access to many of the Windows API codes⁴⁰.

⁴⁰ For the meaning of the expression "*for the sole purpose of interoperating*" see RENDA A. (2004).

Under the subjective profile, in fact, the Sec. III.J.2 *b*) assigns to Microsoft the right of conditioning to the proof of a reasonable business need the access to its API codes; the open source movement cannot easily prove this condition because it is composed prevalently by individual programmers and by non profit organizations.

Moreover, the Sec. III.J.2., *c*) of the Final Judgment, permits to the Redmond's *software house* to allow the access to the informations above mentioned to those who meet reasonable, objective standards established by Microsoft itself for certifying the authenticity and viability of their business.

This can later on limit the number of potential users of the provision and the chances of the open source movement of turning it to their advantage.

Differently, the EU Commission statements⁴¹ have not only imposed a widest information duty on Windows specifications — which for someone impose to the Redmond's firm to disclose an important share of its source code — but specified the addressees and the scope of this provision, so described:

“Microsoft shall make the Interoperability Information available to any Undertaking having an interest in developing and distributing Work Group Server Operating System Product and shall allow the use of Interoperability Information by such Undertaking for the purpose of developing and distributing Work Group Server Operating System Product”.

The wide legal definition of undertaking, in the European Community law, is too well-known to be recalled.

It is sufficient to embrace both non profit organizations — like the Free Software Foundation — and people (professional men and programmers) who contribute to nourish, by their initiative, the *Open Source* movement.

These subjects have — and this is the biggest difference between the two versions of the provision — the interest (not only economic) to know and use Windows interfaces in order to develop and distribute operating systems compatible (and competitive) with those of Microsoft.

⁴¹ Commission's decision, *supra* note 3, Article 2.

In this case we must come to the conclusion that this provision is addressed to open source world too.

And it seems even designed with the purpose of supporting, by means of programs interoperability, the rise of new standards of operating systems, and it seems to share some principles of the open source movement.

The EU Court's decision on the IMS case⁴², lastly, does not concern — at first sight — the open source software. It is relevant, indeed, to specify the *essential facility* definition referring to a data base and to delineate the conditions which make the refusal to supply of the exclusive right's holder, abusive.

There is yet a *fil rouge* which ties this decision, and its precedents⁴³, to the EU Commission decision on the Microsoft case.

The relation is evident if we look at the legal bases of the Commission's reasoning and at its conclusions. The abuse which is challenged to Microsoft in the above mentioned proceeding consists, in fact, in the refusal to supply the technical information necessary to achieve the full interoperability between Windows operating systems and its competitors. This refusal can be as unlawful qualified because, in the Commission's opinion, recur in this case the conditions of essential facility rule, as it happened in the cases Magill, Bronner and IMS, independently by the fact that most of these information are protected by intellectual property rights. The fact is that Microsoft holds an "aggregate" dominant position in both the relevant markets and that the Windows operating system "*is the de facto standard operating system product for client PCs*"⁴⁴. The refusal to supply the information necessary to grant the full interoperability of the programs realised by the competitors with the Windows system is

⁴² *IMS Health GmbH & Co. OHG v. NDC Health GmbH & Co. HG (case C-418/01)* available on the web at <http://europa.eu.int/eur-lex/lex/LexUriServ/LexUriServ.do?uri=CELEX:62001J0418:EN:HTML> (last visited on February 22, 2005).

⁴³ They are the Magill case [*Radio Telefis Eireann (RTE) and Independent Television Publications Ltd (ITP) v. Commission of the European Communities* (joined cases C-241/91 P and C-242/91 P), *European Court reports* 1995, I-743] and the Bronner case [*Oscar Bronner GmbH & Co. KG v. Mediaprint Zeitungs- und Zeitschriftenverlag GmbH & Co. Kg and Other* (case C-7/97), *European Court reports*, I-7791]; see KORAH V.

⁴⁴ Commission's decision, *supra* note 3, paragraph 472.

as unlawful qualified “*due to the indispensability of the input it refuses to supply to its competitors*”⁴⁵.

The decision, however, exceeds the *essential facility doctrine* frontiers which have been delineated by EU decisions and which have been recently fixed by the European Court in the IMS case. Firstly because it considers the three exceptional circumstances in which that rule consents to restrain the IPRs, and the others facility holder’s exclusive rights, not peremptorily. Secondly because the facility definition, really rather indefinite, is substituted by that of “input”, even less determinated. In the third place, because in this case the conditions to qualify the information like “essential” do not seem to exist, at least in the sense so far asserted by the lawyers. Lastly, because Microsoft’s refusal neither seems able to prevent any competition form in the aftermarket, nor to prevent the emersion of products with features different from those of incumbent.

We cannot appraise thoroughly the fairness of this statement and the solidity of its arguments. Its relapses on the competitive equilibrium of software industry are evident and very important.

From now onwards, the information necessary to grant the interoperability with a *de facto* standard developed by the incumbent undertaking, will be considered like an essential input and will be object of disclosure for the purpose to allow that the competitors develop products able to interoperate with the standard. The innovation, for its part, will be less conditioned by the need of realising products compatible with the dominant standard and the competition among the undertakings will be more *in* the market than *for* the market. This fact will yield positive effects in open source programs development too.

8. - Antitrust Law and Evaluation of Technological Innovation

The above examined decisions, do not resolve a general question — which we can here only mention — that is the *rôle* of

⁴⁵ Commission’s decision, *supra* note 3, paragraph 692.

antitrust Authorities in the evaluation of improvement degree which is necessary and sufficient to justify the restriction of incumbent's exclusive rights.

As some authors have outlined⁴⁶, it is not up to the antitrust Authorities neither to give an opinion, nor express a preference about the architecture and the development of some technical standards. Moreover the Authorities do not have the structure able to evaluate the degree of a product improvement as regards to the technical background.

After the IMS and Microsoft decisions, the risk is that the evaluation on the degree of improvement is a competitive judgement which asserts that some products, different from those supplied by the incumbent, are *new* if there is an actual or potential unsatisfied consumer's demand for them⁴⁷. This is the sense of Microsoft decision, in which the disclosure obligation imposed to the standard holder is expressly justified with the purpose to consent the development of compatible products — and then, of products which are substitutes of dominant firm's products — by the competitor undertakings⁴⁸. If this trend will be confirmed and extended to other sectors of new technologies, the uncertain balance-point between the IPRs, on the one hand, and the competition law, on the other hand, risks to move again towards the second one, with some unfavourable effects under the aspect of innovation incentives too.

9. - SCO vs. IBM Case and Open Source Uncertain Future

After having explained the synergic relationship between the open source software and the antitrust law, in a perspective of

⁴⁶ See, MELI V. (2003); BERTANI M. (2004).

⁴⁷ The IMS decision, *supra* note 42, paragraph 48, underlines that the intention "to produce new goods or services not offered by the owner of the right and for which there is a potential consumer demand" is relevant to consider the circumstances which justify the essential facilities doctrine application and to regard that the incumbent's refusal to supply is unjustified.

⁴⁸ See, Commission's decision, *supra* note 3, paragraph 572, where are pointed out the objection raised to Microsoft: "Microsoft's refusal to supply as at issue in this decision is a refusal to disclose specifications and to allow their use for the development of compatible products".

common contribution to the technological improvement, we want to conclude this study with a brief consideration on the future of this model.

A future which, at the first sight, can appear rosy in reason to the foregoing appraisals, but which is really made uncertain by an important issue: the proceeding SCO vs. IBM.

In this case, SCO (ex Caldera Systems Inc.) claims — as UNIX copyright holder — the right to prevent the use of some parts of the UNIX source code for the development of Linux applications⁴⁹. The open source movement is worried about the plaintiff purpose — in case of positive outcome of the lawsuit — to charge with a licence fee all users of Linux operating systems; moreover it is also worried about the Court's interpretation of the copyleft license clauses and about their inadequacy to preserve the users from the risk of suits for damages based on the IPRs violation.

Malicious people think that behind the SCO's initiative there is the hand (not even very invisible) of Microsoft Corporation, which has already demanded and obtained from the plaintiff an onerous license for the use of those exclusive rights.

The proprietary software, then, compelled to retire from the front of antitrust law, want a chance of revenge in the field, surely more favourable for it, of the IPRs, playing on the most effective of its arguments, that is to say: "the software is mine!".

The challenge, never extinguished, between intellectual property and antitrust, go on and will bring many surprises.

⁴⁹ The proceeding has been brought before the District Court of Utah in the US. The text of the *Amended Complaint* is available on the website www.sco.com/ibmlawsuit/amendedcomplaintjune16.html (last visited on February 22, 2005). For a first appraisal on the case and on the possible influence in the open source movement, see FITZGERALD B. - BASSETT G. (2002); *adde* SHANKLAND S. (2004).

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