

**Refusals to License IP:  
are we closer to an optimal legal standard after *Microsoft vs. Commission*?**

Yannis S. Katsoulacos<sup>1</sup>

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**Abstract**

Economic theory suggests that refusals to license IP rights are on average benign, and thus presumptively legal, taking into account both long-run and short-run considerations. If, as the US authorities indicated in *Xerox*, the presumption of legality is quite strong, we show that a *Per Se* Legality standard should be adopted, as it is then superior in *welfare* terms to any discriminating standard including EU’s ‘exceptional circumstances’ one (even though *Per Se* Legality maximizes false acquittals). The scope for reduced costs of decision errors by discriminating standards is not sufficiently large to compensate for negative indirect effects.

If, on the other hand, the presumption of legality is not very strong - the Commission’s point of view regarding interoperability information in *Microsoft*, endorsed recently by the CFI - then a discriminating rule is expected to be superior to *Per Se* Legality. We show that the ‘exceptional circumstances’ standard is likely to be optimal under these circumstances. However, this will be the case not because, as the existing literature suggests, it minimizes the costs of decision errors relative to other standards, such as the one adopted in *Microsoft*, but because it minimizes negative deterrence effects, not taken into account in the existing literature.

**Keywords:** refusal to license, compulsory licensing, legal standards, intellectual property and competition policy, exceptional circumstances, Microsoft

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<sup>1</sup> Professor of Economics, Athens University of Economics and Business, Patission 76, Athens 104 34, Greece.  
EMAIL: [ysk@hol.gr](mailto:ysk@hol.gr)

## 1. Introduction

Properly understood, Intellectual Property (IP) Law and Competition (or Antitrust) Law are complementary both seeking to promote innovation and enhance consumer welfare<sup>2</sup>. Yet there is an apparent conflict between the two. The first, by affording inventors protection from imitation, it excludes at least some competition and promotes higher prices while the IP rights last. The second promotes lower prices by prohibiting conduct that limits competition. A long standing objective of Courts, practitioners, academics and enforcement agencies has been to reconcile this apparent conflict.

Further, the importance of IP related issues in competition policy has grown in the last two decades and this trend is likely to strengthen. Commissioner Kovacic in a recent article mentions that “Much of what the FTC does today takes place at the intersection of competition policy and intellectual property”. Though “this is not a recent development in the agency’s experience”, the Commission’s investment and enforcement actions in the past five years in monopolization and attempted monopolization matters in connection with the exploitation of IP rights “constitute ... (its) most ambitious program in roughly thirty years”<sup>3</sup>. A number of very important cases in which the exploitation of IP rights<sup>4</sup> has come under the scrutiny of the Commission as involving potentially abusive behavior under Article 82, suggest the growing importance of the issue in Europe too<sup>5</sup>. And, as one European legal expert suggested recently, perhaps “in the not too distant future, ‘exceptional circumstances’ in which competition law intervention is justified (in IP licensing cases) will no longer be the empirical exception but the daily bread of competition policy”<sup>6</sup>. Nevertheless, as other commentators have noted, the confusing

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<sup>2</sup> More specifically, their complementary purposes are to balance ex-ante incentives for innovation (IP law) and ex post inefficiencies from the exercise of market power (Competition law). As Gilbert and Shapiro (1996) note while there is no inherent conflict between IP and antitrust laws, with IP law promoting competition in the long-run, “the long run is an elusive concept and in practice great tensions arise”. For a discussion stressing the complementary role of IP and Competition Policy see J. Drexler (2005), who notes the recognition of this role by the laws on licensing in both USA and EU. Also, see Korah (2005), p.14 and Humpe and Ritter (2005), p.143.

<sup>3</sup> Kovacic (2007), p. 321-325.

<sup>4</sup> The term is used here to include patents, copyrights, trademarks, and data/information subject to protection as trade secrets.

<sup>5</sup> The cases include *Volvo v. Veng*, *Bronner*, *IMS Health* and *Microsoft*.

<sup>6</sup> J. Drexler (2005), p. 16.

opinions in many EU and USA antitrust cases involving IP, “suggest that the boundaries that define the scope of IP and antitrust law are far from clear”<sup>7</sup>.

The IP laws in EU and USA provide the owners of IP rights with discretion to license these rights or to make or sell products that embody the IP. However, antitrust laws in both territories, though certainly not identical and with different enforcement records, constrain the use of property, including IP, by a firm with market power and may place limitations on the licensing of IP<sup>8</sup>. There are a large number of ways in which exploiting IP rights can raise antitrust concerns. These include facilitation of product market collusion through horizontal or cross-licensing or through patent pools or patent settlements, exclusive dealing or RPM arrangements through vertical licensing, tying arrangements involving patented products, and refusals to license<sup>9</sup>. In this article we will concentrate on the last practice which, in a number of recent landmark cases, has drawn a lot of attention in both sides of the Atlantic and has generated a great deal of comment.

Competition Law can in principle impose an obligation upon dominant firms refusing to license an IP right to make the property available to their competitors. This is equivalent to a requirement for compulsory licensing<sup>10</sup>. The question is: under exactly what circumstances such a requirement should be imposed? More specifically, what is the appropriate legal standard for dealing with refusal to license practices?<sup>11</sup> The need for such a standard is well recognized<sup>12</sup>; and, the Commission’s proposals in its discussion paper on the reform of article 82 did not meet expectations<sup>13</sup>. The objective of this article is to compare alternative legal standards that have been adopted in EU and USA and also

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<sup>7</sup> Gilbert and Weinschel (2007), p.2. They suggest that “the differences between antitrust-centric and patent-centric lawyers, economists and academics are suggestive of a theological conflict”. Korah (2005) notes that EU case law on the issue of refusals to license IPs “has been far from consistent” (p.15). For Layne-Farrar (2007) the tension in applying antitrust in IPR issues in recent cases is driven by concern that standards create market power that can be abused. She quotes the EU *Microsoft* case as well as the cases of *Dell*, *Rambus*, *Broadcom v. Qualcomm*, and *Nokia v. Qualcomm*.

<sup>8</sup> The EU Transfer of Technology Guidelines (2004) states that “The fact that IP laws grant exclusive rights of exploitation does not imply that IPRs are immune from competition law intervention” (para. 7 of Commission Notice). This view is shared by the US Intellectual Property Guidelines (1995) (Section 2.1).

<sup>9</sup> See R. Hewitt Pate (2003).

<sup>10</sup> As Gilbert and Shapiro (1996) mention “Compulsory licensing may embrace the requirement that the owner of software permit access to the underlying code so that others can develop compatible software application programmes”.

<sup>11</sup> As we shall see, case law in EU and USA diverges in the answer it provides to this question, particularly after the recent EU decision on *Microsoft*.

<sup>12</sup> See for example C. Humpe and C. Ritter (2005), p. 135; they provide a careful extensive discussion of Refusal to Deal issues including comparison of alternative standards.

<sup>13</sup> See Ahlborn et.al. (2006), Section 5.7 and H. Schweitzer (2007), especially section 2.

to examine whether the recent EU *Microsoft* landmark case can provide the right precedent for formulating a new legal standard for dealing with refusals to license.

The European Court of First Instance (CFI) delivering, on September 17<sup>th</sup> 2007, its decision on Microsoft's appeal on *Microsoft vs. Commission* it concurred with the Commission on all substantive issues. One aspect of the Commission's (2004) Decision<sup>14</sup>, found abusive Microsoft's refusal to share interoperability information (communications protocols) for Windows, protected by IPRs (some by patents and others by trade secret), with its competitors in the work-group server operating systems market. The Commission argued that it will have adverse effects on innovation and ultimately on consumers and ordered compulsory licensing. In order to reach these conclusions, the Commission (and the CFI) adopted a new Legal Standard, one that significantly alters certain aspects of the "exceptional circumstances" standard prevailing in EU until then<sup>15</sup>.

Has the Commission (and CFI) been right to advocate a change in the legal standard (or decision rule) that should be adopted in dealing with refusals to license IP? The proposed changes have been commended by some commentators but have also raised substantial opposition. Opponents have argued that the change in the legal standard will increase the cost of decision errors as well as legal uncertainty and administrability costs<sup>16</sup>. However others have taken a positive stance arguing that the new test is compatible with recent moves by the EU Commission to adopt a more "economics-based" approach to unilateral exclusionary practices<sup>17</sup>, that it improves the quality of the test and that it has provided a new paradigm for dealing with continuing to deal cases where dealing involves an IP protected product<sup>18</sup>.

We examine these arguments using a *welfare-based framework* for the optimal choice of legal standards<sup>19</sup>. We first investigate whether refusal to license IP should be considered a

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<sup>14</sup> For a summary see, for example, Korah (2005) and Ahlborn et.al. (2005).

<sup>15</sup> See European Commission Decision of 24.03.04 and Final Judgment of the CFI (September 2007). Microsoft agreed to comply in October 2007, deciding not to appeal to the ECJ (Managing Intellectual Property, 2007).

<sup>16</sup> See for example, Killick (2004), Ahlborn, Evans and Padilla (2005), Geradin (2005) and Byrne (2007). Ahlborn et.al (2006) provide a very thoughtful critique of the Commission's Discussion Paper for reform of article 82 containing proposals for dealing with refusals to license.

<sup>17</sup> See on this its 2005 Discussion Paper on reforming Article 82 and the EAGCP Report (2005).

<sup>18</sup> See for example Anderman (2004), Vezzoso (2005) and Leveque (2005).

<sup>19</sup> This encompasses the Decision Theoretic Approach. For details of this framework see Katsoulacos and Ulph (K&U, 2007a, b). See also Christiansen, A. and Kerber (2006) for an alternative approach to discriminating rules.

presumptively legal practice. We then consider whether there are discriminating rules (examples are what in the literature are referred as Modified *Per Se* Legality or the Rule of Reason) that are superior, in the restricted sense of minimizing the costs of decision errors, relative to a *Per Se* Legality standard for this case. In this comparison, we take into account the quality of the underlying economic analysis available to the enforcement authority as well as the other considerations that underline the Decision Theoretic Approach. We then undertake a full welfare comparison of alternative discriminating and *Per Se* standards taking into account not only the costs of decision errors but also (i) the *indirect* (deterrence) effects of the choice of the standard on the behavior of all firms when deciding whether or not to adopt the practice; and (ii) the *procedural* (or systemic) effects relating to: the costs of making a decision; delays in reaching decisions; and imperfect detection of the actions taking place.

We show that if the presumption of legality is strong - a point of view that US authorities seem to adopt - *Per Se* Legality standard is the optimal legal standard - that is, superior in *welfare* terms to any discriminating standard including EU's 'exceptional circumstances' one. The scope for reduced costs of decision errors by the discriminating standard is then too small to compensate for its negative indirect effects.

If on the other hand the presumption of legality is not very strong - the Commission's point of view in *Microsoft*, endorsed by the CFI, then a discriminating rule is likely to be superior to *Per Se* Legality. The 'exceptional circumstances' standard is the best standard under these circumstances but this is not because, as the existing literature suggests, it minimizes the costs of decision errors relative to other standards, such as the one adopted in *Microsoft*, but because it minimizes negative indirect effects not taken into account in the existing literature.

## 2. Some remarks on the choice of legal standards

Choosing appropriate Decision Rules or Legal Standards is extremely important in implementing Competition Law<sup>20</sup>. Generally, decision rules differ in a number of dimensions with significant welfare implications. These dimensions are:

- (i) The decision errors generated by the rule
- (ii) The indirect (deterrence) effects of the rule
- (iii) The procedural (or systemic) effects of the rule

Our discussion of legal standards for refusals to license IP takes into account all these dimensions.

### (i) *Decision errors of rules*

In choosing between different legal standards, the Decision Theoretic (DT) approach<sup>21</sup> has long recognized, that a first important consideration to take into account is the fraction of harmful actions in all possible circumstances, or what can be referred to as the “base-rate probability of anticompetitive harm”<sup>22</sup>. So when benign actions are very rare it may make sense to ban the lot, taking into account the costs of administration and adjudication, i.e. adopt a *Per Se* Illegality rule. When, on the other hand, harmful actions are very rare rules of *Per Se* Legality should be applied<sup>23</sup>. Further, “Decision theory (also) implies that it is not just the relative frequency of pro- and anti-competitive consequences that matters to the assessment of a *Per Se* rule, but the severity of resulting harm in either case”<sup>24</sup>.

Important analyses espousing a Decision Theoretic (DT) Approach and taking into account these considerations in order to propose optimal legal standards for a number of business practices have been undertaken in a number of papers following the seminal contribution of judge Easterbrook (1992). He put forward a decision error-cost

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<sup>20</sup> This is also true in many other contexts (such as those faced by Sectoral Regulators, environmental agencies, tax authorities etc) in which (a) agents are taking actions that are privately beneficial but from a wider social viewpoint may be harmful or beneficial (b) the degree of social harm/benefit varies with the circumstances under which the action is taken (c) the authority cannot observe the precise circumstances under which any given action is taken. A *discriminating decision rule* is one that attempts to differentiate between benign and harmful actions. For details see Katsoulacos and Ulph (2007a).

<sup>21</sup> See for example Hylton and Salinger (2001), Hylton and Salinger (2004), Ahlborn, et.al (2005) and Salinger (2006).

<sup>22</sup> As Whinston (2006) mentions “the justification of the *Per Se* rule is really nothing more than an application of optimal statistical decision making”.

<sup>23</sup> Vickers, ab.cit. p.4, quoting Easterbrook in US Court of Appeals case *Schor vs. Abbott Labs*.

<sup>24</sup> Vickers, ab. Cit. p.10

framework – proposing the idea that legal standards should minimise the sum of the welfare costs caused by decision errors of type I (false positives or false acquittals) and type II (false negatives or false convictions)<sup>25</sup>. As noted originally by Ehrlich and Posner (1974), “due to the inherent ambiguity of language and the limitations of human foresight and knowledge” decision errors will occur, that is, legal rules will in practice suffer from problems of “overinclusion” (benign actions are prohibited) and “underinclusion” (harmful actions are permitted)<sup>26</sup>.

In our approach we take into account the above decision - theoretic considerations. Further, by relating them to the underlying quality of economic models in identifying benign and harmful refusals to license IP cases we are able to characterize *effectively discriminating* legal standards for dealing with such cases.

*(ii) Indirect (deterrence) effects of decision rules*

The DT Approach, even when account is taken of the underlying quality of economic models in identifying benign and harmful actions, can produce false conclusions because it concentrates on just the subpopulation of cases actually investigated by the Competition Authority (CA) and thus takes into account only the cost of decision errors on these cases and, potentially, administrability considerations. However, while the costs of decision - errors are important, the Indirect (or deterrence) Effects caused by alternative legal standards may well be equally or even more important. This has been recognized by, among others, Joskow (2002) who argues that they are more important than the costs of decision-errors as they include the (cost of) the responses and adaptations that target firms as well as other “firms and markets in general make to antitrust rules ... and (the effect of these) on prices, costs and innovation throughout the economy”<sup>27</sup>.

*(iii) Procedural (or systemic) effects of decision rules*

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<sup>25</sup> See Beckner and Salop (1999), Tom and Pak (2000), Joskow (2002), Evans and Padilla (2004, 2005), Hylton and Salinger (2001), Ahlborn, Evans and Padilla (2005), Christiansen, A. and W. Kerber (2006), Salinger (2006).

<sup>26</sup> Page 268. See also Diver (1983), Polinsky and Shavell (1989), Ogus (1992), Kaplow (1995, 2000), Mahoney and Sanchirico (2005) and Christiansen, A. and Kerber (2006).

<sup>27</sup> Page 98.

Finally, in undertaking a comparison of rules it is important to go beyond the usual decision errors and recognize not just the indirect/behavioral effects of rules and administrability considerations but also two additional types of Systemic Effect - delays in reaching decisions and (imperfect) detection by Competition Authorities (CAs) of the actions taking place.

### 3. Should refusals to license IP be treated as a presumptively legal practice?

#### *Economic analysis*

To rephrase the question in the title of this sub-section, if competition authorities were to use a *Per Se* legal standard for refusals to license IP should this be one of *Per Se* Legality (PSL) or one of *Per Se* Illegality (PSI)? Economic analysis, the documented opinions of economic and legal experts and case law in both EU and USA suggest that the standard should then be one of *Per Se* Legality.

To understand why, assume that firms belong to just two environments which reflect the exact nature of the firms' characteristics and the characteristics of the markets in which they operate. For (type B) firms from environment B the action, a refusal to license IP, will generate social harm, which we take to be measured by the negative of the present value of the change in consumer surplus,  $h_B < 0$  - i.e. will be socially beneficial (or Benign). For (type H) firms from environment H the action will generate social harm of present value  $h_H > 0$  - i.e. will be socially Harmful. In the terminology of Hylton and Salinger (2001),  $h_H$  is the "welfare gain from disallowing a type H action" while  $h_B$  is the "welfare loss from disallowing a type B action".

Let the fraction of firms in environment 2, or what can be referred to as the "base-rate probability of anticompetitive harm", be  $\gamma$ ,  $0 < \gamma < 1$ <sup>28</sup>. Therefore the value of average harm/benefit is  $\bar{h} = \gamma h_H + (1 - \gamma) h_B$ .

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<sup>28</sup> We assume that the values of  $\gamma$ ,  $h_B$  and  $h_H$  are common knowledge.

Assuming that in deciding whether to allow or disallow an action a CA does so on the basis of its expected social harm - the standard for reaching decisions which is typically employed in Europe and US<sup>29</sup> - if a *Per Se* legal standard is used this will be one of *Per Se* Legality if  $\bar{h} < 0$ , so  $\gamma h_H < (1 - \gamma)(-h_B)$ , while it will be one of *Per Se* Illegality if  $\bar{h} > 0$ , so  $\gamma h_H > (1 - \gamma)(-h_B)$ . Thus, a *Per Se* Legality presumption for refusals to license IP requires that for this practice economic analysis and evidence suggest that  $\gamma$  is relatively small and/or that  $h_B$  is larger than  $h_H$  so that  $\gamma h_H < (1 - \gamma)(-h_B)$ .

Indeed economic analysis suggests that both these conditions hold for the following fundamental reasons:

(i) Refusals to license IP actions are only ever likely to be socially harmful if the IP is indispensable in order for other firms to compete. In fact, in most instances, good substitutes are available for patented products or processes or competitors can reverse engineer or “invent around the patent” with relative ease<sup>30</sup>.

(ii) Voluntary licensing is a common phenomenon and in the vast majority of cases there will be perfectly innocent reasons for refusing to license an IPR - as where the IP owner simply exercises its right, provided by IP law, to deny access to its IP, in situations in which he has no private incentive to license, though this is in no way related to enhancement of market power<sup>31</sup>. Also, “these include reasons that are likely to enhance economic efficiency”<sup>32</sup>, reasons that provide an objective justification for the denial<sup>33</sup> and reasons that relate to the desire of the IP owner to promote price discrimination (that could enhance welfare)<sup>34</sup>.

(iii) The above two considerations suggest that  $\gamma$  is likely to be low for refusals to license IP. Coming to the issue of whether  $h_B$  is larger than  $h_H$  we note

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<sup>29</sup> This was not so in EU until recently, see for example Korah (2005), p.4. An alternative would be to base decisions on a more comprehensive welfare measure by considering the net harm taking into account the benefit to the firm from pursuing the action – as is happening in some countries such as Canada and Australia.

<sup>30</sup> This fact, as Gallini et.al. (1998) suggest, underlines the basic principle that competition policy should not presume that an IPR confers market power.

<sup>31</sup> There will be a mutually acceptable license iff total industry profits increase with licensing. See Katz and Shapiro (1985).

<sup>32</sup> Gilbert and Shapiro (1996).

<sup>33</sup> Such as, for example, doubts about the creditworthiness of the potential licensee etc. See Humpe et.al. (2005) p. 161.

<sup>34</sup> Gilbert and Shapiro (1996).

that the welfare loss from convicting a benign action and imposing compulsory licensing (i.e.  $h_B$ ) reflects the loss from less innovation caused by the reduction in the *ex ante* incentives to invest and innovate. This reduction in *ex ante* incentives to innovate, due to lower expected return from innovating as innovators are forced to license in situations where it is not privately rational to do so, is compounded by reduced incentives to innovate due to higher returns expected by not innovating<sup>35</sup>. On the other hand,  $h_H$ , the welfare gain from convicting a harmful action, comes from the extra consumers' surplus when compulsory licensing leads to an expansion of industry output. This short-run static allocative gain is likely to be much smaller than the dynamic welfare loss from reduced innovation<sup>36</sup>. Thus for a typical refusal to license IP action we expect  $h_B$  to be larger than  $h_H$ .

Two further remarks are due in relation to this conclusion. First, as shown by Gilbert and Shapiro (1996) even neglecting effects on incentives to innovate, compulsory licensing may well *reduce welfare in the short-run* due to a decrease in efficiency, as the entry of inefficient firms is facilitated<sup>37</sup> - this factor reinforces the conclusion just reached. Second, when the licensee utilizes the license to produce a new product that is not a close substitute to the product of the licensor thus expanding the market and meeting unsatisfied consumer demand, the value of  $h_H$  is going to be considerably larger<sup>38</sup>. We need to come back to this point later on<sup>39</sup>.

### *Legislation and case law*

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<sup>35</sup> Gilbert and Shapiro (1996), Katz and Shapiro (1985). See also the discussion in Ahlborn et.al. (2006) and (2005). As the former note the seemingly opposite results of Tandon (1982), Gilbert and Shapiro (1990) and Denicolo (1996) are due to the assumption made that policy makers can, in the presence of compulsory licensing, control (prolong) the duration of patents. On the other hand, one can construct cases where, under rather special conditions, incentives for complementary innovations increase with compulsory licensing – see for example Leveque (2005).

<sup>36</sup> See Ahlborn et.al. (2006) and (2005) – especially the latter for quite an extensive discussion.

<sup>37</sup> “This will happen when the licensee has high costs in the absence of the license and also relatively high costs with the license compared to the licensor”, p.6. However see Aoki et.al. (2004) and Cugno et.al. (2006) for arguments that support the prediction of short-run static allocative gains from compulsory licensing.

<sup>38</sup> See Ahlborn et.al. (2005) p. Section V.D.

<sup>39</sup> Finally, we should remember that the importance of the above considerations concerning the effects of Compulsory Licensing (CL) depend on the industry under consideration – in particular, on the extent to which, in the industry patent protection is a significant factor to R&D commitments and on the extent to which CL can have a significant effect in increasing effective competition. For brief reviews and references to the varied empirical evidence see F.M. Scherer's 1995 FTC Testimony and N.L Tsilas (2007). W. M Cohen (1999) though critical of the post-1982 US trend “towards strengthening and broadening patent protection”, recognizes the importance of the patent system for innovation in industries such as drugs, medical equipment, biotechnology, software, semiconductors, chemicals and scientific instruments.

There is no doubt that IP and antitrust legislation in both US and EU treat refusals to license IP as presumptively legal. As noted by Gilbert et.al. (2007) “US patent law expressly states that ‘no patent holder ... shall be denied relief or deemed guilty of misuse or illegal extension of the patent right by reason of his having ... refused to license or use any rights to the patent’ ... The Supreme Court has held that a patentee is under no general obligation to license its invention”<sup>40</sup>. Ahlborn et.al. (2005) interpret US Courts as having “given preeminence to the protection of the *ex ante* incentives for innovation over the antitrust goal of *ex post* output expansion ... They have generally chosen between a *per se* Legality approach and ‘rebuttable presumption’ or modified *per se* legality approach”<sup>41</sup>.

This is evident in what are probably the two most famous recent US cases involving refusal to license, *Eastman Kodak Co. vs. Image Technical Services Inc.* and *CSU vs. Xerox*. Both cases involve allegations by a group of independent service organizations (ISOs) that Kodak and Xerox were involved in unlawful monopolization and attempting to monopolize by refusing to license patented parts required for unobstructed access to the service market. In the first case the district court and, after appeal, the Ninth Circuit, found for the ISOs, adopting a rebuttable presumption approach<sup>42</sup> and finding that the presumption had been rebutted due to the fact that only sixty-five of the thousands of parts at issue were patented, to the fact that Kodak’s IP defense was raised very late in the litigation and could have been viewed as pretextual as opposed to a valid business justification and to concerns that Kodak was using its IP rights as justification for tying practices<sup>43</sup>. In contrast, in the second case, the Federal Circuit found for Xerox, adopting in essence a *Per Se* Legality approach, arguing in what has become a historic decision that “in the absence of any illegal tying, fraud in the patent and trademark office or sham litigation, the patent holder may enclose the statutory right to exclude others from making, using or selling the claimed invention free from liability under the antitrust

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<sup>40</sup> Gilbert et.al. (2007), p. 20.

<sup>41</sup> Ahlborn et.al. (2005), p. 1149.

<sup>42</sup> This was also used in the *Data General vs. Grumman Systems Support* case. See Ahlborn et.al (2005), p. 1150 and Gilbert et.al. (1996), p. 8.

<sup>43</sup> See Ahlborn et.al. (2005) 1150-1 and Gilbert et.al (2007), p. 21.

laws”<sup>44</sup>. Though this decision has been criticized it is worth noting that even FTC Chairman Robert Pitofsky, one of the most prominent critics, has said that he has “no quarrel with the fundamental rule that a patent holder has no obligation to license or sell in the first instance”<sup>45</sup>.

In EU it is mainly competition law that “has been left ... to strike a balance between the prohibitions of Article 82 and the exercise of IPRs at points of conflict”<sup>46</sup>. Nevertheless, until the recent *Microsoft* case, “Like most US Courts, the European Court of Justice (ECJ) ... appears to have adopted some kind of ‘rebuttable presumption’ in favor of the legality of refusal to license”<sup>47</sup>. In specifying the precondition for a rebuttal, or for finding ‘exceptional circumstances’, the ECJ has, however, taken a novel approach. It does not require a showing of anticompetitive intent, as the *Kodak*-court did. Nor does it require a completely separable actionable abuse, like the *Xerox*-court. The ‘Exceptional circumstances’ as developed by the ECJ rather reflect an ‘essential facilities’ rationale<sup>48</sup>, plus additional requirements to which we will turn below.

#### **4. A comparison of the ‘exceptional circumstances’ test to *Per Se* Legality: costs of decision errors**

The standard adopted in the US case of *Xerox* represents a good example of a *Per Se* Legality standard. All refusals to license IP actions not involving “illegal tying, fraud in the PTO or sham litigation”, irrespective of the characteristics of the firms and of the markets are allowed. Are there discriminating standards (such as the ‘exceptional circumstances’ standard proposed by the EU Commission and Courts) that are welfare improving on this rule? In this subsection we answer first the more restricted question:

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<sup>44</sup> The case, as well as the case involving Kodak, has been extensively discussed. See Gilbert et.al. (2007), J. Baker (1998), Ahlborn et.al. (2005), Pitofsky (2000), Glenklen (2001 and 2003), Pate (2003), Hovenkamp et.al. (2007), Schweitzer (2007). Most of these articles also contain discussion of other important US refusal to deal cases.

<sup>45</sup> Gleklen (2001), p. 1.

<sup>46</sup> Anderman (2004), p. 7. See also Korah (2005).

<sup>47</sup> Modified *Per Se* Legality is the alternative interpretation, by Ahlborn et.al. (2005), of the ECJ standard.

<sup>48</sup> Schweitzer (2007), p. 11. Ahlborn et.al. (2005) also argue that, despite the differences, there are also important parallels between EU and USA on refusal to licence IP cases, both been highly reluctant to override an owner’s IP rights (p. 1158).

when can we expect that discriminating standards will reduce the cost of decision errors relative to PSL?

*A necessary condition for discriminating rules to reduce the cost of decision errors relative to Per Se Legality*

Discriminating are rules that purport to discriminate between actions on the basis of their welfare effects or their expected social harm taking into account the characteristics of the firms undertaking the actions and of the markets in which they operate. Adopting a discriminating rule clearly implies adopting an “effects-based” approach to competition policy.

Assume that the CA cannot observe the precise circumstances of the action but can use an economic model (out of the many potentially available to it) and available information on the market, the firm, technology, demand etc. to discriminate between benign and harmful actions<sup>49</sup>. The models that the CA uses, however, are not fine enough to enable it to accurately assess the probability that a specific action is benign (pro-competitive) or harmful (anti-competitive). Assume that the criteria and models the authority uses are good enough that with probability  $p_B$ ,  $0 < p_B \leq 1$ , actions that are benign, if investigated, are classified as benign and are allowed, and with probability  $p_H$ ,  $0 < p_H \leq 1$ , actions that are harmful, if investigated, are classified as harmful and are disallowed. If  $p_B + p_H = 1$  then the probability of being convicted/disallowed is exactly the same whichever environment the firm comes from, so the knowledge generated by the model is completely uninformative. However if  $p_B + p_H > 1$  then firms from environment B are more likely to be allowed than are firms from environment H, while firms from environment H are more likely to be disallowed than are firms from environment B. So the knowledge generated by the model is more informative.

Figure 1, in which we assume that  $p_B + p_H > 1$ , can be used to illustrate<sup>50</sup>.

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<sup>49</sup> The discussion in this subsection follows closely Katsoulacos and Ulph (2007a).

<sup>50</sup> This sort of Figure was originally used by my research collaborator David Ulph in his work on issues relating to risk rules for tax avoidance, Ulph (2006).

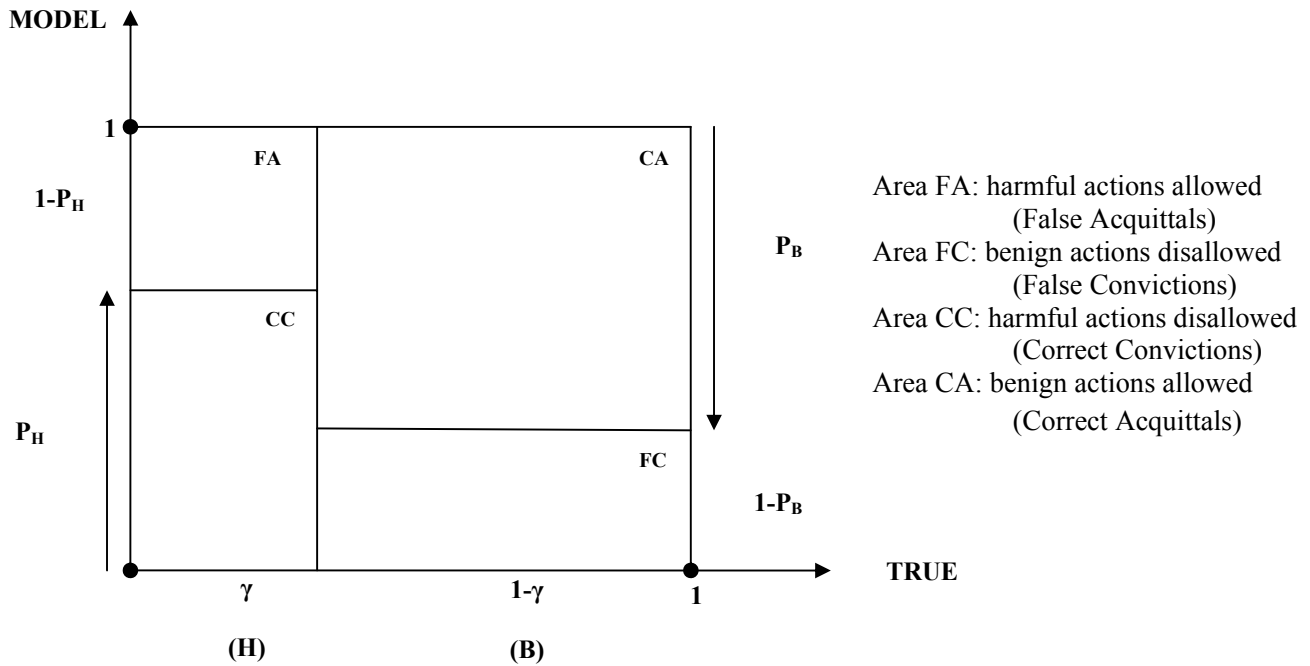


Figure 1

Remark: note that to make sure that only harmful actions are disallowed the model should be very good in identifying benign actions (i.e. have  $p_B = 1$ ); having a very good model in terms of identifying harmful actions ( $p_H = 1$ ) will certainly not guarantee that. Similarly, to make sure that only benign actions are allowed, the model should be very good in identifying harmful actions (i.e. have  $p_H = 1$ ); having a very good model in terms of identifying benign actions ( $p_B = 1$ ) will certainly not guarantee that.

Given:

- (i) The CA's judgment about the quality of the model it uses (i.e.  $p_B$  and  $p_H$ );
- (ii) its understanding of the proportion of harmful cases in the population ( $\gamma$ ); and
- (iii) its view of the harm from anti-competitive outcomes and the benefit from pro-competitive actions

the authority can calculate the expected social harm caused by an action contingent on been harmful,  $\bar{h}(H)$ , and the expected social harm caused by an action contingent on been benign,  $\bar{h}(B)$ . The CA then disallows or allows an action conditional on being

Harmful (resp. Benign) as  $\bar{h}(H) > 0$  or  $\bar{h}(H) < 0$  (resp.  $\bar{h}(B) > 0$ ,  $\bar{h}(B) < 0$ ). Clearly if both  $\bar{h}(H)$  and  $\bar{h}(B)$  are of the same sign the CA cannot do better than use a Per Se rule: if  $\bar{h}(H), \bar{h}(B) > 0$  that will be Per Se Illegality while if  $\bar{h}(H), \bar{h}(B) < 0$  it will be Per Se Legality (PSL) rule. To put it otherwise, for a Discriminating Rule to be an Effective Discriminating Rule it is necessary that  $\bar{h}(H) > 0 > \bar{h}(B)$ . In this case the CA will disallow all actions classified as harmful and allow all actions classified as benign. In terms of Figure 1, actions in areas CC and FC are disallowed and actions in areas FA and CA are allowed.

Let us now consider when a discriminating rule will be superior to a *Per Se* rule. Katsoulacos and Ulph (2007a) prove the following Proposition (the part that is crucial for our argument here is presented below):

Proposition 1:

An Effective Discriminating Rule minimizes the cost of decision errors. Equivalently, an Effective Discriminating Rule improves welfare relative to a *Per Se* rule (given that only decision errors are taken into account).

There are two steps in showing this. The first is to derive a condition for a discriminating rule to reduce the costs of decision errors relative to *Per Se*. The second is to show that this condition is necessary and sufficient for the rule to be effectively discriminating. Consider the first step for the case of interest here, i.e. when the relevant *Per Se* rule is one of PSL.

Notice that under PSL the CA is correctly allowing all the benign actions but wrongly allowing all harmful actions. The error-costs involved are as follows:

- the Rate of False Convictions is  $RFC^{PSL} = 0$ ;
- the Rate of False Acquittals is  $RFA^{PSL} = \gamma$ ;
- the Cost of False Convictions is  $CFC^{PSL} = RFC^{PSL}(-h_B) = 0$ ;
- the Cost of False Acquittals is  $CFA^{PSL} = RFA^{PSL}.h_H = \gamma h_H$

and so the overall Cost of Decision Errors is:

$$CDE^{PSL} = CFC^{PSL} + CFA^{PSL} = \gamma h_H \quad (1)$$

Suppose instead that the CA operates an effectively discriminating rule (ED - Rule). Under this Rule the CA will be wrongly disallowing some cases from environment B and wrongly allowing some cases from environment H. Assuming that the fraction of harmful actions undertaken under the ED-rule is indeed  $\gamma$  (see below) then under the ED-Rule:

- the Rate of False Convictions is  $RFC^{ED} = (1 - \gamma)(1 - p_B)$ ;
- the Rate of False Acquittals is  $RFA^{ED} = \gamma(1 - p_H)$ ;
- the Cost of False Convictions is  $CFC^{ED} = RFC^{ED}(-h_B) = (1 - \gamma)(1 - p_B)(-h_B)$ ;
- the Cost of False Acquittals is  $CFA^{ED} = RFA^{ED}h_H = \gamma(1 - p_H)h_H$ ;

and consequently the overall Cost of Decision Errors is:

$$CDE^{ED} = CFC^{ED} + CFA^{ED} = (1 - \gamma)(1 - p_B)(-h_B) + \gamma(1 - p_H)h_H \quad (2)$$

Note that the ED-rule increases false convictions and reduces false acquittals relative to PSL. To compare the two rules, note that from (1) and (2) it follows that:

$$CDE^{ED} \leq CDE^{PSL} \Leftrightarrow (1 - \gamma)(1 - p_B)(-h_B) \leq \gamma \cdot p_H \cdot h_H \Leftrightarrow \frac{p_H}{1 - p_B} \geq \frac{(1 - \gamma)(-h_B)}{\gamma h_H} \quad (3)$$

which implies that although an ED-Rule has higher costs of False Convictions and lower costs of False Acquittals, the overall error cost of the ED-Rule is lower if it is true that:

$$q_H \equiv \frac{p_H}{1 - p_B} \geq \frac{(1 - \gamma)(-h_B)}{\gamma h_H} \equiv s_p > 1 \quad (4)$$

with  $s_p$  indicating the strength of the presumption of legality. Notice that if, instead, we compared welfare (W), but neglecting other effects, since under PSL this is:

$$W^{PSL} = -\bar{h} = (1 - \gamma)(-h_B) - \gamma h_H \quad (5)$$

while under the ED-rule it is:

$$W^{ED} = (1 - \gamma)p_B(-h_B) - \gamma(1 - p_H)h_H \quad (6)$$

Condition (4) is also exactly the condition for  $W^{ED} \geq W^{PSL}$ . Katsoulacos and Ulph (2007a) establish that condition (4) is necessary and sufficient for the ED-rule to be effectively discriminating i.e. for  $\bar{h}(H) > 0 > \bar{h}(B)$ .

Proposition 1 states that a discriminating rule needs to be of sufficiently high quality for the rule to be superior to Per Se, in the sense that the quality index  $q_H \equiv \frac{p_H}{1 - p_B}$  must be sufficiently high relative to the strength of the presumption of legality,  $s_p$ . In other words, an effects-based approach will improve on the costs of decision errors only if the models employed can effectively discriminate between benign and harmful actions. It is clear that it is more likely that the ED-rule is superior to PSL, all other things equal, when the model used by the rule is good in identifying benign actions (i.e. when it has high  $p_B$ ) and thus smaller costs of false convictions.

Before examining whether the standard used in EU to deal with refusals to license IP is superior to PSL note an important implicit assumption made in the preceding analysis. This is that the fraction of harmful actions actually undertaken under the ED - rule will indeed be  $\gamma$ . We discuss this further in the next section.

*The ‘exceptional circumstances’ standard: is it superior to PSL?*

In two cases that have dealt specifically with refusals to license IPRs by a dominant firm, *Magill* (1995) and *IMS Health* (2004), the ECJ established that such conduct could be deemed to be abusive only under ‘exceptional circumstances’. These are:

- (i) The IP requested must be ‘indispensable’ or ‘essential’ to compete;
- (ii) Refusal to provide access to the IP amounts to elimination of competition in a secondary market (so it is necessary that two distinct markets are involved)<sup>51</sup>;

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<sup>51</sup> As Humpe and Ritter (2005) mention this requirement was deprived of any substance in *IMS Health* by accepting that a potential or ‘hypothetical’ market would be sufficient (see also below).

- (iii) By gaining access to the IP, competitor(s) must be able to offer new products or services not offered by the IP owner and for which there is a clear potential unsatisfied consumer demand;
- (iv) There is no objective justification for the refusal<sup>52</sup>.

Each of these conditions is necessary for establishing abuse (its absence will render the action non-abusive) and, as the Court confirmed in *IMS Health*, it is only when all these conditions hold (cumulatively) that the action can be classified as abusive<sup>53</sup>. There has been extensive discussion about the exact interpretation of these conditions, various aspects of which have been heavily criticized<sup>54</sup>. Concerning indispensability, Temple-Lang (2002) notes that “EU law obliges antitrust authorities to assess the objective impossibility of (competitors) developing a second facility ... (which) in the case of IPRs ... (amounts to) whether they could develop their own ... IPR which they could use instead of the right which they claim is essential. Usually they can.... Even a patent can be ‘invented around’”. Given this, while the second condition emphasizes that there can be no abuse just because the refusal eliminates a competitor (the requesting party), as Humpe and Ritter (2005) point out “elimination of competition (condition (ii)) and indispensability (condition (i)) constitute one and the same test”, in that the latter also disposes of the former<sup>55</sup>.

Yet, the ‘exceptional circumstances’ standard, though leaving “a number of issues to be resolved” has also drawn substantial praise from eminent economic and legal experts. As Anderman mentions the standard as articulated in *Magill* “creates a paradigm that gives considerable recognition to the special qualities of IPRs as regulated by their own legislation and as promoters of innovation ... (Thus) it allows extensive scope for the

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<sup>52</sup> See for example Temple Lang (2002), Anderman (2004), Humpe and Ritter (2005), Ahlborn et.al. (2005), Schweitzer (2007). Temple-Lang, Humpe and Ritter and Schweitzer (and to a lesser extent the other two articles) also discuss other EU IPR and no-IPR related cases involving refusal to deal – all refer to the most celebrated non-IPR related refusal to deal case, Bronner. It should be noted that both *Magill* and *IMS Health* concerned copyrights and not patents – in contrast to the *Microsoft* case. We return to this later on.

<sup>53</sup> See for example, Drexel (2005), Section II; Ahlborn et.al. (2005), p. 1128; Schweitzer (2007), p. 13.

<sup>54</sup> All articles in the previous footnote are critical of various aspects especially perhaps condition (iii) – the new product test – though Ahlborn et.al. (2005) are certainly in favor. Also, of the ‘hypothetical market’ concept introduced in *IMS Health* in the leveraging context. Criticism of these aspects of the rule, as reincarnated in the Commission’s Discussion Paper for Reform of Art.82, is also contained in Ahlborn et.al. (2006) and Schweitzer (2007).

<sup>55</sup> On the other hand, as Temple-Lang (2002) correctly indicates, elimination of competition does not necessarily imply indispensability as when competitors are less efficient or are offering less desirable products than the IP owner. Humpe and Ritter (2005) argue that the condition should be that *effective* competition is eliminated.

legitimate exercise of IPRs by their owner, carefully circumscribing the occasions when the owner of IPRs enjoying a real economic monopoly can be charged with abuse by judicial authority... (T)he test ... offers one type of reconciliation between competition law and IPRs based on their mutual interest in innovation by stressing that the ‘exceptional circumstances’ for a compulsory license ... include cases of new products with potential consumer demand but not ‘clones’ or ‘me too’ products”<sup>56</sup>.

Ahlborn, Evans and Padilla (2005) write: “The set of ‘exceptional circumstances’ listed in *Magill* and *IMS Health* constitutes a reasonable implementation of the optimal legal standard for the assessment of refusals to license IP: modified *per se* legality.... The ECJ test limits compulsory licensing to those situations in which the prospective social benefits of licensing are large, while the negative effects of reducing the incentives to innovate are small. The ECJ test ensures that intervention is restricted to cases where the intervention is still likely to increase social welfare”<sup>57</sup>.

Given the analysis in the previous part of this sub-section, the question is, what sort of discriminating standard would we expect to improve on PSL? The answer to this depends crucially on the strength of the presumption of legality,  $s_p$ . To clarify, let us assume that anticompetitive refusals to license are quite rare and that the loss in welfare from disallowing benign refusals is typically quite a bit larger than the gain in welfare from convicting benign ones (and imposing compulsory licensing), so that the strength of the presumption of legality,  $s_p$ , is large. In particular assume that  $\gamma \leq 0.1$  and that the ratio  $(-h_B / h_H) \geq 1.5$ . Then, as Table 1 below makes clear, it is essential in order for a discriminating rule to be superior to PSL in minimizing the costs of decision errors, which requires that the discriminating quality of the rule is sufficiently high to compensate for the strong presumption of legality, that the rule is based on models that allow a very high value of  $p_B$  - in other words, it is essential that the rule is a very “low false-convictions” rule. Indeed, going for a “low false-acquittals” rule - a very high value of  $p_H$  - is almost next to irrelevant for achieving that objective: even achieving zero false

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<sup>56</sup> Anderman (2004), p. 8-13.

<sup>57</sup> Page 1110.

acquittals ( $p_H=1$ ) is of no help (compared to a mediocre acquittals rule,  $p_H = 0.5$ ), unless at the least  $p_B > 0.926$ .

Table 1<sup>58</sup>

$(-h_B/h_H)$	$\gamma$	$S_p$	$q_H$	$P_B^* = 1 - (P_H/S_p)$	$P_H$	$P_B^{**} = 1 - (P_H/S_p)$	$P_H$
1.5	0.1	13.5	13.5	0.963	0.5	0.926	1
1.5	0.08	17.3	17.3	0.971	0.5	0.942	1
1.5	0.06	23.5	23.5	0.979	0.5	0.957	1
1.5	0.04	36.0	36.0	0.986	0.5	0.972	1
1.5	0.02	73.5	73.5	0.993	0.5	0.986	1
2	0.1	18.0	18.0	0.972	0.5	0.944	1
2	0.08	23.0	23.0	0.978	0.5	0.957	1
2	0.06	31.3	31.3	0.984	0.5	0.968	1
2	0.04	48.0	48.0	0.990	0.5	0.979	1
2	0.02	98.0	98.0	0.995	0.5	0.990	1
2.5	0.1	22.5	22.5	0.978	0.5	0.956	1
2.5	0.08	28.8	28.8	0.983	0.5	0.965	1
2.5	0.06	39.2	39.2	0.987	0.5	0.974	1
2.5	0.04	60.0	60.0	0.992	0.5	0.983	1
2.5	0.02	122.5	122.5	0.996	0.5	0.992	1

Now it would seem that what the ‘exceptional circumstances’ test aims to achieve is exactly this. The test establishes an “extremely high threshold for unilateral refusals to license to fall under Article 82”<sup>59</sup>. Given that the necessary and cumulative criteria that the test requires to be satisfied for abuse are based on sound economic theory<sup>60</sup> and truly capture the circumstances under which refusals to license will be socially harmful, the test makes more or less certain that any actions that do not satisfy one or more of these criteria and hence are classified by the test as benign are indeed benign. In other words, the test is characterized by a very high value of  $p_B$ , i.e. it is a very “low false-convictions” rule. This suggests in turn that the ‘exceptional circumstances’ rule could be superior to PSL in the sense of satisfying condition (4) and thus minimizing the costs of

<sup>58</sup>  $P_B^*$  is the  $P_B$  value that equates  $S_p$  to  $q_H$  when  $P_H = 0.5$  while  $P_B^{**}$  is the  $P_B$  value that equates  $S_p$  to  $q_H$  when  $P_H = 1$ .

<sup>59</sup> Schweitzer (2007), p. 14.

<sup>60</sup> Ahlborn, Evans and Padilla (2005) built up a strong case for this.

decision errors. Of course the above are true IF, as we have assumed, the strength of the presumption of legality,  $s_p$ , is large, a point to which we return below.

### 5. Is the ‘exceptional circumstances’ test superior to PSL? A full welfare comparison

Even if, as we suggested it might, the ‘exceptional circumstances’ test is superior to PSL in terms of minimizing the costs of decision errors, this is not sufficient for been *welfare* superior. Indeed it can be shown that, generally, taking into account the broader indirect and systemic effects associated with legal standards is likely to reduce the attractiveness of using a discriminating standard relative to *Per Se*<sup>61</sup>. In the case under examination, the fundamental reason is that the discriminating standard will impose a stronger deterrent on firms than *Per Se* in conditions where it is preferable to have a weaker deterrent effect - given that the practice is on average benign.

To see this note that the adoption of the discriminating standard will deter a fraction of firms taking the action since, as we have seen above, under such a standard there will be an increase in convictions and a reduction in acquittals relative to PSL. We assume that the extent to which firms are deterred from taking the action depends on the perceived risk of having their action investigated and disallowed, and on the cost to be incurred if this happens which we can take to be equal to the loss in profits from having the action stopped, the cost  $C \geq 0$  that may be incurred due to *remedies* (reversing the action) and to the cost of *antitrust fines*  $f \geq 0$ <sup>62</sup>. If the probability of the action been investigated (the *coverage rate*) is  $p$ ,  $0 < p < 1$ , and the probability of been convicted (disallowed) is  $\lambda$  then the perceived risk of having their action investigated and disallowed is  $p \cdot \lambda$ . We take  $\lambda$  to be equal to the frequency  $\lambda = (1 - \gamma)(1 - p_B) + \gamma p_H$  with which actions are disallowed under the discriminating rule - which is known to firms<sup>63</sup>. This implies that exactly the

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<sup>61</sup> See for details Katsoulacos and Ulph (2007a).

<sup>62</sup> Assume that all costs, such as litigation costs are zero for simplicity.

<sup>63</sup> This will be true if the firms do not know whether their action is socially harmful or socially beneficial. If firms know or can infer the model used by the CA (which we assume is true), then if firms also know their type, more H-type firms will be deterred by the discriminating rule. The assumption that firms do not know whether their action is socially benign or harmful is a reasonable one for many unilateral practices, such as refusal to license IP, the implications of which, for social welfare, depend on a complex weighing of anticompetitive and precompetitive effects. Further, the

same fraction of firms of each type (B or H) will be deterred from taking the action, which guarantees that of the firms taking the action, the fraction of type H is indeed  $\gamma$ .

Assuming that firm's present value of the expected change in profit from taking the action is  $b$  and that a fraction  $\varphi$ ,  $0 \leq \varphi \leq 1$ , is what the firm actually gets if its action is stopped, where  $\varphi$  captures the fact that there are *delays* in reaching decisions (the *litigation cycle* is often quite long), the firm's net expected benefit from taking the action will be  $(1 - p\lambda)b + p\lambda[\varphi b - (C + f)]$ . A firm will therefore only take the action if

$$b > \underline{b} = \frac{p\lambda(C + f)}{1 - p\lambda(1 - \varphi)}$$

Consequently the same fraction  $F(\underline{b})$  of each firm type will be deterred from taking the action<sup>64</sup>.

Given the above considerations it is easy to show that the welfare comparison between PSL and the ED-rule can now be expressed as follows:

$$W^{ED} - W^{PSL} = -F(\underline{b}) \cdot (-\bar{h}) + [1 - F(\underline{b})] p(1 - \varphi) [CDE^{PSL} - CDE^{ED}] - K(p_B, p_H) \quad (7)$$

where  $K(p_B, p_H)$  is the total economic cost of using the discriminating rule<sup>65</sup>. The first term on the RHS is negative because the *ED-Rule* introduces a *deterrent effect* that stops some firms from taking actions which are on balance benign. The second term is positive because, as we saw above *the ED-rule makes better decisions*. Finally the *ED-Rule* has a higher implementation cost. This has a number of implications:

Proposition 2:

- (i) Even though the ED-rule reduces the costs of decision errors it may well be welfare inferior to a PSL rule. For the ED-rule to improve welfare it is not enough that it leads to better decisions: the ED-rule must lead to *much better decisions*. Indeed, if the ED-rule improves decisions a little bit, in the sense that the

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more complicated analysis of asymmetric deterrence effects, with firms knowing their type and the model used by the CA, though it modifies, does not fundamentally alter the main results above – see Katsoulacos and Ulph (2007b).

<sup>64</sup> Where  $F$  is the cumulative distribution function of  $b$ .

<sup>65</sup> See Katsoulacos and Ulph (2007a). As noted there  $K$  “could include: the costs of initially developing the ‘model’, the costs to the CA of gathering the information required by the ‘model’; the cost of conducting the analysis in each of the cases. Clearly, these costs could depend on  $p$ , but since that is treated as exogenous ... we do not make this explicit.

We assume that if  $p_B + p_H = 1$  then  $K(p_B, p_H) = 0$  but that if  $p_B + p_H > 1$  costs are increasing in each of the arguments”.

inequalities in (3) just about hold, it will certainly lead to a reduction in welfare relative to PSL. Note that deterrence effects reduce welfare under the ED-rule by making more negative the first term but also by reducing the population of firms taking the action and investigated on which the advantage of lower costs of decision errors applies (thus reducing the size of the second positive term). Deterrence will be greater the larger the costs associated with remedies and fines.

- (ii) The positive welfare impact due to the improvement in decision errors by the ED-rule is also mitigated by three *systemic effects*: (a) a low coverage rate,  $p$ ; (b) a long litigation cycle (large  $\varphi$ )<sup>66</sup>; a high cost of implementation ( $K$ ).

Taking account of all the above considerations if refusals to license are a practice for which there is a strong presumption of legality then the best legal standard is that of *Per Se* Legality. This is because, even though the ‘exceptional circumstances’ standard is a “low false-convictions” standard, such a standard will only *just about* improve on the costs of decision errors when  $p_B$  is close to or higher than 0.95. But as just noted above (part (i) of Prop 2), when the improvement is very small then adopting the discriminating standard will certainly lead to a reduction in welfare, as this improvement, mitigated by the longer delays and higher implementation costs, will be outweighed by negative deterrence effects<sup>67</sup>.

## 6. The Microsoft standard vs. ‘exceptional circumstances’: a full welfare comparison

As already mentioned in the Introduction, in the *Microsoft* case the Commission (and later the CFI) proposed and adopted a new legal standard, for handling refusals to license IP, a standard that significantly alters certain aspects of the (traditional) “*exceptional*

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<sup>66</sup> The effect of this is a bit more complicated, as it reduces the deterrence effect. However it is clear that a large enough delay in reaching decisions will certainly eliminate the ED-rule’s relative (decision-errors) advantage.

<sup>67</sup> Even though these are at their smallest with a high -  $p_B$  rule.

*circumstance*” standard prevailing in EU until then<sup>68</sup>. Further, we have referred to some of the arguments put forward by the critics and the supporters of this shift. Here our objective is to undertake a closer comparison of the new to the traditional standard using the framework of the last two sections.

To quote Ahlborn et.al (2005), according to the *Microsoft* standard, in order for refusals to license IP to be deemed abusive under article 82 the following conditions must hold: (1) the requested IP is “necessary” for a competitor to “viably stay in the market”; (2) the refusal represents a reduction in “the level of disclosures”; (3) “there is a risk of eliminating competition” in the secondary market; (4) the refusal to supply “has the consequence of stifling innovation in the impacted market”; and (5) the refusal is not objectively justified because “on balance” the possible negative impact of an order to supply in the dominant firm’s incentive to innovate is outweighed by its positive impact on the level of innovation in the whole industry.<sup>69</sup>

Thus the *Microsoft* standard, in comparison to the ‘exceptional circumstances’ standard:

- (a) Significantly lowers the threshold of the condition relating to “indispensability and consequent elimination of competition” adopting a weaker condition requiring that the requested IP is “necessary” leading to “a *risk* of eliminating competition” in the secondary market.
- (b) The new product condition of the traditional rule is replaced with the weaker condition that refusal may stifle innovation in the impacted market - with the nature of innovation not clarified but certainly not been subject to the requirement that it will be incorporated in clearly identifiable new products or services.
- (c) Significantly alters the traditional objective justifications condition adding a new “*balancing test*” that has the characteristics of a Rule of Reason test in the sense

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<sup>68</sup> In its Discussion Paper on the reform of article 82 the Commission also adopts an approach for dealing with refusals to license that departs significantly from the ‘exceptional circumstances’ standard and is in tune in most respects with the *Microsoft* standard. For critical commentaries on this see Ahlborn et.al. (2006) and Schweitzer (2007).

<sup>69</sup> Page 1110. This is summary of pages 779-784 of the Commission’s Decision. Below we are going to concentrate mainly on conditions (1) and ((3)-(5). Condition (2) is related more to issues arising from refusals to *continue* to license. These could be important - Anderman (2004) - though there are serious problems with this condition - see Ahlborn et.al (2005), p. 1146 and Humpe and Ritter (2005). From our point of view it is the other conditions that are far more important for a comparison with the ‘exceptional circumstances’ test.

of weighing in each specific case the potential positive and negative effects of compulsory licensing on incentives to innovate in the industry as a whole<sup>70</sup>.

It should be abundantly clear that what the Commission objected to in relation to the ‘exceptional circumstances’ test is treating each of its conditions as necessary - in the sense that the absence of any one of these conditions should render a case non-abusive (benign). Thus it argues that “there is no persuasiveness to an argument that would advocate the existence of an exhaustive checklist of exceptional circumstances and would have the Commission disregard *a limine* other circumstances of exceptional character that may deserve to be taken into account when assessing a refusal to supply”<sup>71</sup>. It thus proposes that instead the right approach is to examine the “entirety of the circumstances” surrounding any specific case and that a refusal may be deemed abusive even though the conditions of the exceptional circumstances standard are not met<sup>72</sup>.

Interpreted in terms of the analysis of the previous two sections we can say that the Commission believes that by adopting the traditional test it runs a serious danger of falsely acquitting too many socially harmful cases. When one or more of the conditions of the traditional standard do not hold, the Commission is arguing, a refusal to license IP may still be harmful, and an innovation-incentives effects approach/test is best in order to identify these other cases: the traditional standard is too high on “false acquittals” according to the Commission or the box/area FA in Figure 1 is too large. Having a new standard that admits the possibility that there are harmful cases under a wider set of circumstances will lower false acquittals and thus raise welfare<sup>73</sup>.

The point is that, if the conditions in the ‘exceptional circumstances’ standard are indeed based on sound economics, then while by lowering thresholds one may reduce false

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<sup>70</sup> All changes have been severely criticized; see for example Killick (2004), Ahlborn et.al (2005), Geradin (2005) and Byrne (2007). For a criticism of the traditional test’s new product condition see Leveque (2005). It is very important to note that here we are describing the fundamental attributes of the new standard proposed by the Commission – we are NOT arguing that in the specific *Microsoft* case the traditional conditions were not met - a different issue. For example, as Leveque (2005) notes, the Commission (and, actually, the CFI) would argue that in the *Microsoft* case the traditional ‘exceptional circumstances’ conditions were also met and that this is true both with respect to “indispensability and elimination of competition” and with respect to the “new product” test.

<sup>71</sup> Page 555 of Decision. The Commission regards the conditions of the ‘exceptional circumstances’ test when cumulatively present as sufficient.

<sup>72</sup> Page 558 of Decision.

<sup>73</sup> This approach is repeated in the Discussion Paper for reform of article 82 in which the Commission “fundamentally reconceptualizes the approach towards refusals to license .... A strong presumption against a duty to license .... Is turned into a significantly laxer test of abuse...”, Schweitzer (2007), p. 21.

acquittals one will also increase false convictions. Now we have shown in the previous section that adopting a “low false acquittals” rule for a practice for which there is a very strong presumption of legality is the wrong strategy: only by adopting a “low false convictions” rule (such as the ‘exceptional circumstances’ one) we can hope to achieve better results than a PSL standard. However, the crucial question is: does the Commission believe that we should treat refusals to license IP as strongly presumptively legal?

The line of thinking at the heart of the Commission’s arguments in *Microsoft*, suggesting that harmful refusals to license IP may not be so rare and that disincentive effects on IP owners may, in not a negligible fraction of circumstances, be outweighed by positive compulsory licensing effects, suggests that the Commission believes that while refusals to license IP are on average likely to be benign the presumption for this should not be thought of as very strong:  $s_p$  may be larger than unity but not significantly so. There is actually another very strong indication that the Commission is thinking in this way. This comes from its treatment of its “balancing test” essentially as an efficiency defense that falls squarely on the shoulders of the defendant. It is the latter that has to prove that compulsory licensing will reduce innovation incentives in the industry as a whole, not the Commission. But then, this allocation of the *Burden of Proof* is strongly reminiscent of article 81 or more generally cases in which the practice is presumed illegal. The Rule of Reason type of approach advocated through the “balancing test” itself suggests that there is no strong presumption of legality.

Of course, if the presumption of legality is not very strong for refusals to license IP, the reduction in the costs of decision errors from adopting an effectively discriminating rule is much more likely to be substantial thus making, from equation (7), such a rule welfare superior to PSL.

The question is, if we assume that  $s_p$  is not very large what would then be the implications of that for the comparison of the *Microsoft* and the ‘exceptional circumstances’ standards? Table 2 below compares “low false-acquittals” (high-  $p_H$ ) rules to “low false-convictions” (high-  $p_B$ ) rules under the assumption that  $0.1 \leq \gamma \leq 0.5$  and that  $1.8 \geq (-h_B / h_H) \geq 1.1$ , so the presumption of legality is not very strong.

Remember that a discriminating rule will reduce the cost of decision errors only when  $q_H > s_p$ . Given this, we can now see in Table 2 that a “low false-acquittals” rule such as the *Microsoft* rule may well be superior to a “low false-convictions” rule such as the ‘exceptional circumstances’ rule in reducing the costs of decision errors – contrary to what is suggested by Ahlborn, Evans and Padilla (2005). A given discriminating quality of the rule achieved by low-  $p_H$  and high-  $p_B$  can also be achieved by a low-  $p_B$  and a high -  $p_H$ . It is then not easy to attack Commission’s adoption of a new standard on the grounds that the ‘exceptional circumstances’ standard minimizes costs of decision errors.

Table 2<sup>74</sup>

$(-h_B/h_H)$	$\gamma$	$s_p$	$q_H$	$P_B^* = 1 - (P_H / s_p)$	$P_H$	$P_B^{**} = 1 - (P_H / s_p)$	$P_H$
1.1	0.5	1.1	1.1	0.545	0.5	0.182	0.9
1.1	0.4	1.7	1.7	0.697	0.5	0.455	0.9
1.1	0.3	2.6	2.6	0.805	0.5	0.649	0.9
1.1	0.2	4.4	4.4	0.886	0.5	0.795	0.9
1.1	0.1	9.9	9.9	0.949	0.5	0.909	0.9
1.4	0.5	1.4	1.4	0.643	0.5	0.357	0.9
1.4	0.4	2.1	2.1	0.762	0.5	0.571	0.9
1.4	0.3	3.3	3.3	0.847	0.5	0.724	0.9
1.4	0.2	5.6	5.6	0.911	0.5	0.839	0.9
1.4	0.1	12.6	12.6	0.960	0.5	0.929	0.9
1.8	0.5	1.8	1.8	0.722	0.5	0.500	0.9
1.8	0.4	2.7	2.7	0.815	0.5	0.667	0.9
1.8	0.3	4.2	4.2	0.881	0.5	0.786	0.9
1.8	0.2	7.2	7.2	0.931	0.5	0.875	0.9
1.8	0.1	16.2	16.2	0.969	0.5	0.944	0.9

There are however other reasons that suggest that the traditional rule is likely to be superior. These emerge from a full welfare comparison of the two standards. Going back to equation (7) it can easily be seen that:

Proposition 3:

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<sup>74</sup>  $P_B^*$  is the  $P_B$  value that equates  $S_p$  to  $q_H$  when  $P_H = 0.5$  while  $P_B^{**}$  is the  $P_B$  value that equates  $S_p$  to  $q_H$  when  $P_H = 0.9$ .

All other things equal, for presumptively legal practices<sup>75</sup>, it is most likely that a ED-rule will be *welfare* superior if it is a “low false-conviction” rule (high-  $p_B$  rule), rather than a “low false-acquittals” rule (high-  $p_H$  rule). The reason is that a high-  $p_B$  rule reduces the negative deterrence effect of the rule by reducing  $\underline{b}$  and thus  $F(\underline{b})$ . In contrast, a high-  $p_H$  rule reinforces negative deterrence effects as a high-  $p_H$  increases  $\underline{b}$  and thus  $F(\underline{b})$ <sup>76</sup>.

It could potentially be argued that the *Microsoft* rule, by lowering thresholds, might increase the coverage rate  $p$  - which in equation (7) is treated as exogenous<sup>77</sup> - thus raising the attractiveness of this rule. However, for this to alter the result above, the increase in  $p$  must compensate for the increased deterrence (increase in  $F$  in the first term on the RHS of (7)) and for the reduction in the population of actions on which the positive effect of improved decisions apply (reduction in  $(1 - F)$  in the second term of (7)), under the high-  $p_H$  (*Microsoft*) rule.

Overall, we can conclude that the *Microsoft* standard is likely to be *welfare* inferior relative to its predecessor - the ‘exceptional circumstances’ standard - but this is true not necessarily because it is inferior in terms of the costs of decision errors but because it is likely to produce strongly negative deterrence effects.

## 7. Concluding Remarks

In this paper we have applied the welfare based framework for the optimal choice of legal standards of Katsoulacos and Ulph (2007a) to explore the issue of legal standards for refusals to license IP. This is an area in which, as a number of eminent commentators have noted, case law “has been far from consistent”. One of the reasons for this may well be that, while economic theory unequivocally suggests that refusals to license IPs are on average benign, this presumption is not unequivocally accepted as been very strong.

Our conclusions differ significantly from, though they may be seen to simultaneously strengthen, some of the conclusions reached in existing literature. In particular our framework suggests that *Per Se* Legality should be adopted for refusals to license IP

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<sup>75</sup> Even if the strength of presumption is small.

<sup>76</sup> Welfare under the discriminating rule may well be concave in  $p_H$  - see also Katsoulacos and Ulph (2007a) - suggesting that a lower quality rule (in terms of its overall quality  $q_H$ ) may be welfare superior to a higher quality one.

<sup>77</sup> In Katsoulacos and Ulph (2007a) we assume that  $p$  is determined by third-party reporting.

when the presumption of legality is quite strong. If this is not the case we show that a discriminating rule should be adopted and that the ‘exceptional circumstances’ rule is likely to be the optimal rule, though not necessarily because it is superior in terms of its lower costs of decision errors but because it is likely to minimize negative deterrence effects.

The above analysis has treated IPRs as an all encompassing category that includes patents, copyrights, trademarks and interoperability information. There is the issue as to whether antitrust policy should treat all these uniformly<sup>78</sup>. Some authors have stressed the differences between patents and other forms of IPRs and argued that legal standards should be designed to take these differences into account<sup>79</sup>. The Commission seems to share this view, arguing that even if interoperability information “may be considered a trade secret it may not be appropriate to apply to such refusals to supply ...the same high standards for intervention” as in other cases<sup>80</sup>. What the above analysis makes clear is that the first step in dealing with this issue is to examine whether there are significant differences in the strength of the presumption of legality for each of the various types of IPRs. If so then the optimal standard is very likely to be different for each type along the lines we suggested above. This is the subject of further future research.

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<sup>78</sup> On the more general issue about IPRs should be treated as other forms of property see the extensive discussions of Gilbert et.al. (2007) and Humpe and Ritter (2005).

<sup>79</sup> See for example Ahlborn et.al. (2006), section 5.7.

<sup>80</sup> Discussion Paper on the reform of article 82, para. 242.

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