Competition law enforcement and intellectual property rights

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Abstract

Antitrust violations in the field of intellectual property rights are particularly difficult to detect because practices like cross licensing, patent pools or refusal to deal are not prohibited as such. Furthermore, more than in any other field of antitrust enforcement, decisions by competition authorities may directly affect the incentive to innovate and therefore antitrust authorities have to exercise great care in what they do.

Antitrust laws prohibit behavior that go beyond what patents, copyright and trademarks generally allow. For example price fixing, coordinated output restrictions or foreclosure of innovation are the most important practices to be prohibited by antitrust provisions. Among these, foreclosure of innovation is the most controversial. For example the European Commission in a number of recent cases has suggested that a dominant company abuses its dominant position by refusing access to an essential facility (protected by an intellectual property right) in circumstances when a new product is denied to consumers. The case law developed so far in Europe does not identify precise criteria for defining what is actually “new”. From the existing case law, it is only possible to conclude that the Commission does not impose an obligation to license only when the licensee would produce just a replica of the IP protected product/service.

Much more straightforward are situations where market foreclosure originates from practices that directly impede the entry of competitors, especially at times when intellectual property rights are no longer available. The problem that arises is the extent of the use of presumptions. However there are no reasons to abandon the general approach that there is a proof of a violation when there is no other explanation for a given behavior than its abusive objective. For example, this may be the case for reverse payments so common in pharmaceuticals that have no other explanation than to avoid a judgment of patent nullity.

Introduction

According to First (2007), “intellectual property law is out of control” because “for more than a decade, intellectual property rights holders have constantly pushed at its boundaries, expanding the scope of their rights and thereby increasing the costs for all users of intellectual property products”. As the Federal Trade Commission (2003) and the National Academy of Science (2004) confirm, the United States patent system leads to too many patents because of the looseness of the non-obviousness standard. As a consequence, suggests Carlton (2007), if “obvious ideas are patented, than subsequent innovations that rely on these ideas will be forced to pay for the use of these obvious ideas, and that reduces the incentives to innovate”. Also the terms of patent and copyright protections have been strongly criticized. Recently, Boldrin and Levine (2007) conclude: “On the basis of the available evidence, our best estimate of the length of optimal copyright term is about two years, and that of patents is about ten years”. The huge difference between these estimates and existing terms of patent (20 years) and copyright (75 years after the death of the author) protection shows, at the minimum, how wide the range of options is, especially for copyright. Finally, Acemoglu and

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Akcigit (2006) conclude that full patent protection is not optimal from the viewpoint of maximizing the growth rate of the economy and that it would be more efficient to provide greater protection to technological leaders than to simple followers. I will not discuss in this paper how best to protect intellectual property. However the points just made confirm that existing legislation is far from optimal. I will concentrate on recent developments in antitrust enforcement, considering that antitrust is the instrument designed for disciplining market power, including that one originating from intellectual property rights.

In terms of general principles to be applied, as it is stated in the 1995 US (joint Department of Justice and Federal Trade Commission) guidelines for the licensing of intellectual property, intellectual and physical properties are the same. There is no need for special antitrust provisions with respect to intellectual property. However there are important differences between physical and intellectual properties that affect the way antitrust laws are actually enforced. First of all, contrary to physical property, without legal protection it is impossible to exclude others from appropriating the economic benefits originating from it or simply from using it. This implies, for example, that an access regime imposed on intellectual property cannot ignore that, while access to physical property is objectively limited by existing capacity, access to intellectual property is limited only by market demand. Furthermore, while physical property is easily defined, the extent of intellectual property protection may be quite uncertain, even to its owners.

Like with physical property, the right to exclude others from the free use of intellectual property does not imply market power. Indeed in most cases, substitutes are available for products that are protected by intellectual property rights. In such circumstances intellectual property rights do not give rise to significant market power and the mere existence of intellectual property rights should not be seen as a matter that raises antitrust concerns (McGrath 1984; Anderson and Gallini 1999). This position was affirmed by the US Supreme Court only in 2006, in Independent Ink, where the Court stated that “Congress, the antitrust enforcement agencies, and most economists have all reached the conclusion that a patent does not necessarily confer market power upon a patentee. Today, we reach the same conclusion [and therefore hold that in all cases involving a tying arrangement, the defendant must prove that the plaintiff has market power in the tying product.]”\(^2\).

Nevertheless, intellectual property rights can give rise to significant market power in particular cases and the exercise of such rights can conflict with the content and/or the objectives of competition law in a variety of ways. Problems with competition law are most likely to arise in regard to five main categories of practices: (i) the acquisition of intellectual property rights, for example through mergers, (ii) technology licensing arrangements; (iii) cooperative arrangements among innovating firms, including patent pools; (iv) refusals to license; and (v) exhaustion concerns. A further aspect of tension between intellectual property and competition policy is that efforts by patent and copyright owners to enforce their intellectual property rights are often met by antitrust counterclaims pursuant to which it is argued that the rights of the intellectual property owner should be curtailed on the basis that it is illegally protecting or expanding its market position (Gilbert and Shapiro 1996).

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\(^2\) Independent Ink 126, US Supreme Court at 1293
In markets where innovation is an important competitive force, a merger may increase firms ability and incentives to bring new innovations to the market and to exert pressure on rivals to innovate. Or vice versa, effective competition may be reduced by a merger between two directly competing innovators. The problem is that merger analysis is by its nature forward-looking and predictive. Not much emphasis is therefore placed on providing estimation on the likely timing of a research program or on the likely results that will be achieved, “given the unpredictability of research and the speed at which new development potentially can shift dynamic markets”.

For example in 2004 the FTC decided to close its investigation on the merger of Genzyme Corp. and Novazyme Corp., the only two companies active in the research and development of therapies for the so called Pompe disease. According to a statement made by then-Chairman Muris, the merger was quite likely to produce efficiencies that could accelerate development of a successful treatment for this otherwise lethal disease and therefore the merger was allowed to go through. The interesting element in this case is that the FTC proceedings started two years after the merger had already been consummated. Indeed the conclusions of the FTC are very much based on the observation that during these two years Genzyme had not slowed its research program for identifying a therapy against Pompe disease. It is not at all clear what the FTC decision would have been if the merger were analysed at the time it was announced. However, given the importance the incentives to undertake research have played in the FTC decision, there is a positive probability that the merger would have been blocked. This indicates how strong the uncertainty is about research programs.

Mergers may be approved by antitrust authorities also by accepting commitments by or imposing conditions on merging parties aimed at maintaining competition. These remedies are either structural or behavioral. Structural remedies are generally related to the selling of an activity, a line of business or a company in order to immediately restore competition in the market. Behavioral remedies are designed to modify or constrain the market conduct of merging firms. Remedies related to access to intellectual property rights, are particularly difficult to categorize because they are at the same time structural and behavioral. In any event, even when behavioral remedies are chosen, competition authorities tend to prefer remedies that do not require a strict monitoring on company’s behavior because they lack the resources to keep a strict control on market conduct.

Indeed there is a strong presumption, at least for horizontal mergers, that a structural remedy is preferable. In these circumstances a divestiture is likely to be more effective, as it addresses the competitive harm directly, and will incur lower costs of monitoring. In the case of intellectual property rights, divestiture or mandatory licensing are structural remedies that antitrust authorities often adopt for authorizing a merger.

Experience shows however that intellectual property is so specialized that antitrust authorities may find it very difficult to identify the relevant patents to divest or to license so as to allow the emergence of a viable competitor, or are not fully aware of the amount of information needed for a competitor to enter a market. For example, in the 2000 investigation on the joint venture between Shell and BASF (Project Nicole) which would have led to the creation of dominant position in a number of markets associated with polypropylene and polyethylene, the European Commission authorized the merger by accepting a commitment by the parties

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3 OECD (2006)
to license to all interested third parties the patent rights related to a new method for producing polypropylene (the metallocene patent rights). However, the simple transfer of these patent rights was not enough for allowing a competitor to become commercially viable, since a significant amount of know-how should have been transferred as well. Know-how was not mentioned in the decision of the Commission, the parties did not comply with this further requirement, no entry occurred, but there was no legal base to act against them. Again there is great uncertainty on the way remedies should be drafted.

**Technology licensing agreements**

Licensing practices such as technology grant-backs, tie-ins, territorial market limitations and field-of-use restrictions are often addressed under the provisions against restrictive agreements. As to the substantive treatment of these practices, the trend in competition law is to treat these practices under a case-by-case or (as it is known in the US) a "rule of reason" standard. Certainly, economic learning is supportive of such approach in that it makes clear that these practices can also serve legitimate pro-competitive functions (OECD 1989; Anderson and Gallini 1999). Under the rule of reason approach, if the agreement restricts actual or potential competition that would have existed without the agreement it may be considered restrictive. In this respect, agreements involving intellectual property do not require special provisions nor new rules.

While in the past there have been significant differences between jurisdictions in terms of the counterfactual to consider in order to evaluate an agreement under competition law, there is now increasing convergence, at least between the US and the EU. The recent modernization reform of European competition law makes it clear that the counterfactual to consider for assessing the restrictiveness of an agreement is the absence of that agreement, not a different less restrictive agreement. For example, if two producers established in two different countries agree to cross license two competing technologies and furthermore agree not to compete one in the country of the other they restrict competition that existed or would have existed without the agreement. Their agreement may be restrictive. On the other hand if a drug manufacturer in country A signs an exclusive agreement with a distributor in country B containing a no export clause, this agreement does not restrict competition in country A (where the country B distributor could have exported) because without the agreement the distributor would not have had the right to distribute anything.

As a matter of first principles, licensing agreements between non-competitors are generally pro-competitive because they allow to “combine intellectual property rights with other complementary factors of production such as manufacturing and production facilities and workforces”. However agreements between competitors are more likely to create competition problems. In some instances however competition between undertakings that use the same technology may be as important as competition between undertakings that use competing technologies. The reason is that greater intra technology competition may have beneficial external effects because it might induce greater competition by substitute

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6 Such an agreement would be prohibited in the European Union where competition rules pursue also the objectives of internal market integration. However also in the EU territorial restraints in an agreement between non-competitors may not be restrictive if the restraints are objectively necessary for a licensee to penetrate a new market.
7 See US Antitrust Intellectual property guidelines paragraph 2.3.
technologies. The analysis of restrictiveness of these intra technology agreements requires to prove that rivalry is not significantly reduced with respect to what it would have been without these agreements. What matters is whether the parties of the agreement would have been actual or potential competitors in the absence of the agreement. The existence of the license does not make them competitors.

Licensing agreements are usually restrictive when they are put in place by firms with market power and they lead to:

- The coordination of pricing or output, and foreclosure of access to inputs;
- Unjustified exclusivity. The US guidelines refer to two specific types of exclusivity: exclusive licenses, which restrict the right of licensors to license others or to use the technology themselves (or both)p; and exclusive dealing, that is, when a license restrains a licensee from using competing technologies;
- A reduction of rivalry and of the pace of innovation in the markets affected;
- Unless there are tangible efficiencies resulting from the agreement.

A case-by-case approach to the treatment of licensing practices such as tying requirements, exclusive territories, exclusive grant-back clauses, or field-of-use restrictions in international technology licensing agreements may strike some as unduly deferential. An unduly strict or "per se" approach where all these restrictions are prohibited is likely, however, to be self-defeating. Sweeping prohibition of restrictive practices in licensing agreements would raise the costs and/or reduce the incentives for technology owners to enter into voluntary technology transfer arrangements. This does not, however, imply that restrictive licensing arrangements should be immune from scrutiny under competition law; rather, the suggestion is simply that such scrutiny should be carried out using the market power and other screens and tests that are suggested by economic literature and case experience (see, for further discussion, US Department of Justice and Federal Trade Commission (1995); Canada, Competition Bureau (2000), the essays in Anderson and Gallini (1999), the European Commission guidelines on technology transfer agreements, 2004).

Portfolio of cross licensing agreements, patent pools and standard setting organizations

Patent rights necessary to manufacture a given product may be fragmented by a number of patent holders. This fragmentation may increase the cost of bringing a product to the market because of the multiple negotiations that may get involved. Furthermore each patent, even the smallest one, becomes essential and may require very high royalties, blocking entry or impeding follow on innovations. As Shapiro (2001) underlines, these multilayer patents may risk holding up a product from reaching the market because it might have inadvertently infringed one of these patents.

Portfolio cross licenses and patent pools can solve the problem, reducing transaction costs and mitigating these hold up problems. These arrangements can of course be anticompetitive in so far as they result in price fixing, coordinated output restrictions or foreclosure of innovation. The risk of anticompetitive effect increases when the agreements extends not just to complementary, but also to substitute patents. Furthermore if agreements to cross license would extend also to follow on innovations, it may reduce firms incentives to engage in R&D because of the increased risk of free riding.
The major reason why firms enter into cross license agreements is to avoid infringement litigations, especially in industries where there are overlapping patent rights. In this context such agreements are pro-competitive in so far as they allow products that may be blocked to come to market, but such efficiency is very much related to the low quality of the intellectual property rights involved. Certainly a better solution is to improve the quality of granted patents. The pro-competitive nature of cross licenses is that they mainly take place among complementary patents. What matters is whether the companies participating in the agreement would have competed without it and whether the cross-licensing agreement leads to collusion. Such analysis is not that straightforward because many IPR’s are not simply either substitutes or complements but very often there is a mixture of the two. In such cases it is very difficult to predict whether horizontal or vertical aspects prevail.

Cross licenses and pools are certainly anticompetitive if the coordination extends to pricing and output decisions. In 1998 the US FTC challenged a patent pool between Summit and VISK, two companies engaged in the manufacturing in lasers employed in performing photo-refractive keratectomy, an eye surgery for vision correction. Only the pool could license third parties and each company had a veto power on such decision. The pool would ask 250$ for each procedure performed and as a consequence each company charged doctors 250$ for each surgery performed. The two companies claimed that the pool was efficient because it eliminated litigation between them, which was highly probable since each had a potentially blocking patent. The reality was that the two companies created a pool, which in principle was more competitive friendly than cross licenses, but in the six years of its existence the pool did not issue any license to third parties. Once Nidek entered the market they both sued, indicating that both companies had a joint interest in monopolizing the market.

The case is very instructive of what happens with patents, especially when they are low quality. Let’s assume that firm A has a patent that has only a 20% probability of being recognized as valid. Suppose that firm B has a patent contiguous to that of firm A and produces under suspicion of counterfeiting. B can sue A for validity and A can sue B for counterfeiting. If they both succeed all their patents are declared invalid and the market opens up. Profits of firms A and B fall to zero. Under these circumstances firms A and B have a strong interest either to cross license or to create a pool. By so doing they can protect their patents and increase the probability of keeping new entrants out. The problem with all this is that its restrictive nature requires a lot of information to be discovered. Putting it differently, unless patents are clearly complementary, it is very difficult to establish whether a cross licence agreement or a patent pool is a pro or anti-competitive instruments.

Like cross licensing agreements and patent pools, also standard setting agreements are particularly important for bringing to market products, especially in industries like communications and information technology, that to be successful require interoperability and compatibility. Through standard setting agreements firms cooperate among themselves in order to create a bundle of patents such that the new technology can be commercialized more easily or at all8. Like with cross licensing and patent pools, antitrust enforcement addresses the issue of standard setting in order to impede collusion (on prices and output) and exclusion. As a consequence antitrust enforcement intervenes only in so far as firms form a cartel or exclude competition from third parties either through some form of unilateral conduct or through concerted practices.

One major US case in this area is against Rambus, a computer technology developer that unlawfully monopolized the markets for four computer memory technologies that had been

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incorporated into industry standards for dynamic random access memory – DRAM chips. DRAMs are widely used in personal computers, servers, printers, and cameras. The FTC found that Rambus deceived an industry-wide standard-setting process to which it actively participated by concealing patents it already had and also those that it was developing. Once the standard had been adopted Rambus was able to unlawfully monopolise the relevant DRAM markets. As Rubin (2007) suggests, “the harm to competition that supports the antitrust violation in Rambus II is the distortion of ex ante rivalry between alternatives… Such rivalry obviously suffers when the proponent of a standard fails to disclose a relevant patent.”

Cases like this, more than on efficiency considerations, are based on a notion of fair competition, where antitrust enforcement impedes that a firm manipulates a process for its personal gain. Indeed Commissioner Jon Leibowitz in a concurring separate statement to the FTC decision suggested that “Rambus’s abuse of … (the) standard-setting process was intentional, inappropriate, and injurious to competition and consumers alike”, adding that Rambus’s conduct not only ran afoul of the antitrust laws, but also constitutes an unfair method of competition in violation of the broader reach of the FTC Act. As Commissioner Leibowitz suggests, it is certainly the case that Rambus violated section 2 of the Sherman Act that prohibits unlawful monopolisation. Unfortunately, it is highly unlikely however that the same behaviour could have been considered a violation under an abuse of dominance standard that requires the existence of dominance before an abuse could be identified.

**The refusal to license**

Competition law does not generally impose on firms a duty to deal. When a firm (even a dominant one) refuses to deal with a customer (as opposed to a competitor), in most circumstances an intervention by a competition authority may not be justified. The underlying hypothesis is that refusing an opportunity for profit is not rational for any firm, including dominant ones, and that if it is done there are usually other justifications for it.

On the other hand, refusal to deal with a competitor may be an abuse, for example when a vertically integrated dominant firm refuses to supply to a competitor downstream an essential input that it controls. In these circumstances, the refusal can impede the development of competition in the downstream market. In general, to assess abuse in cases of refusal to deal cases it is necessary to look at: the market power of the firm, the rationale for the refusal, and the resulting competitive harm. As always, it is critical to properly verify that access be really indispensable for effectively competing. First of all there might be alternatives in the market so that the shut-out firm can sidestep the refusal and still be an effective competitor, then the refusal to deal should not be considered anticompetitive. Furthermore, when this is not possible, it may be that the facility could be duplicated at reasonable cost in a reasonable time. Finally there may be objective justifications for the refusal, such as lack of capacity or that the customer is not trustworthy.

In order to develop a useful body of case law competition agencies are increasingly careful not to mistake injury to competition with injury to individual competitors. Orders requiring firms to provide mandatory access to "essential" facilities should be sought only when the benefits of providing such access clearly outweigh the costs. Authorities of most jurisdictions

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9 This section and the next is based on Anderson and Heimler (2007).
avoid embracing an excessively broad "essential facilities doctrine," that is, routinely compel firms to deal with rivals, which often benefits competitors but not competition. Such rule can discourage firms from investing in new goods and services for fear that they could not earn an adequate return (for a useful discussion of these and other problems associated with the doctrine of essential facilities, see Werden 1987). Essential facilities in the US is basically dead as of Trinko (2004). I would suggest that the refusals to deal encompass a much broader setting than essential facilities.

In the United States, two opinions by the Supreme Court from previous decades (the Aspen10 and Kodak11 cases) shed light on this issue, suggesting that refusal to deal can be an abuse when access is denied after having been granted in the past12. As Baker (1999) notes, in both cases the refusal was deemed abusive only insofar as: (i) a rival was substantially excluded; (ii) the mechanism for doing so was disruption of a collaborative and complementary relationship; and (iii) the firm engaging in the conduct lacked a satisfactory business justification. In a more recent decision, Trinko v. Verizon13, the Supreme Court held that when a binding regulatory obligation to deal is in place, refusal to deal should not be considered an antitrust law violation. More generally, the Court's opinion in Trinko takes note of the intrinsic difficulties involved in the use of mandatory access as an antitrust remedy and makes clear that there is no general duty of firms to cooperate under US antitrust law (McDonald 2004). The Court in Trinko goes as far as suggesting that Aspen was an outlier for Section 2 exclusionary behavior.

Although US and EC case law and policy on refusals are sometimes characterized as being widely divergent (see, e.g. McDonald 2005), the differences are somehow over-stated. The 1998 European Court of Justice decision in Bronner14 suggests that the EC and US approaches are more convergent than is sometimes suggested. Bronner originated from the refusal by Mediaprint, a major Austrian newspaper publisher, to provide access to its local distribution network to a much smaller rival, Oscar Bronner. The Court held that a refusal to deal is an abuse of a dominant position when it is "likely to eliminate all competition in the […] market […]and that [it is …] incapable of being objectively justified, but also that the [refused] service […] be indispensable to carrying on that person's business, inasmuch as there is no actual or potential substitute". As it can be seen by the conditions identified in Oscar Bronner, the recognition of an abuse does not require in Europe that the refusal interrupts an existing contractual relationship. In this sense the possibilities for recognizing an abuse for refusal to deal are larger in Europe than in the US. In any case, in the circumstances of the case, the Court held that Oscar Bronner had not been able to demonstrate that the distribution network for which it requested access was indeed indispensable for entry. Consequently, the Court concluded, the refusal to deal was not an abuse.

Where the United States and Europe appear to differ the most is in their treatment of refusal to deal by intellectual property owners (i.e. refusal to license). In the US, established case law indicates that there is very strong or possibly absolute prerogative of patent holders to refuse

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12 Aspen dealt with a situation in which three of four downhill skiing areas in a prestige location (Aspen, Colorado) were owned by a dominant firm which terminated a pre-existing joint ticket arrangement with a firm owning the fourth area; Kodak dealt with the taking of steps by the Kodak corporation to make it more difficult for independent service organizations to service Kodak photocopiers, in part by denying access to copier replacement parts.
to license their technology. The 1995 “Antitrust Guidelines for the Licensing of Intellectual Property” of the United States Department of Justice and Federal Trade Commission, while emphasizing that intellectual property is not different from physical property in terms of its being subject to antitrust liability, are reluctant to admit that refusal to deal by IP owners could be anticompetitive. In contrast, the European Court of Justice in the Magill case has defined criteria for requiring access to IP and has recently confirmed them in the IMS Health case. These criteria stipulate that, in order for a refusal to license to be treated as an abuse, the following requirements must be met: (i) there must be no actual or potential substitute for the IP-protected product in the relevant market; (ii) there can be no business justification for the exclusion; and, perhaps most importantly, (iii) a new product must be denied to consumers because of the refusal. The Court's third requirement is the only one specific to intellectual property. The case law developed so far in Europe does not identify precise criteria for defining what is actually “new”, arguably leaving intellectual property owners, including prospective ones, in a state of uncertainty as to the extent of exclusionary power they are entitled to when granted a patent.

Proceedings in the 2004 European Commission case against the Microsoft Corporation provide further scope for reflection. Contrary to Magill and IMS, the Microsoft case is not final since it has been appealed and the Court of First Instance has not yet taken a decision in the case. A key aspect of this case concerned the refusal by Microsoft to provide competitors with information relating to its operating system source code which, it was alleged, was necessary for the development of competing software products. Although the relevant information may have been protected by copyright, the Commission considered it essential for allowing the development of competing applications so that they could run smoothly on Windows. In the Microsoft case, the Commission's treatment of the first two requirements that the Court had developed in IMS was straightforward: it found, on the facts, that there was no substitute for the IP protected product in the relevant market and that no satisfactory business justification for the exclusion had been shown. As to the third requirement enunciated in Magill and IMS (that a new product must be denied to consumer), this does not appear to have been considered explicitly in the Commission's decision. Perhaps, this signals that this requirement can be met on the basis of a denial of a potential as opposed to an actual new product. Before concluding this discussion on refusal to deal a final observation on access prices is appropriate. Indeed an obligation to provide access to a competitor has to be associated with an indication of the maximum price above which access would become unprofitable, so as to make sure that access at excessively low prices would not reduce the incentives to invest or to innovate on the part of essential facility owners. The “price minus avoidable cost” rule, or Efficient Component Pricing Rule (ECPR), originally introduced by Willig (1979) and further developed by Baumol and Sidak (1994) and Baumol and Willig (1995), addresses exactly this question and, by preserving the profits of the facility owner,

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15 The 1995 Magill case originated from the refusal by Irish television stations to license their copyrighted program listings to Magill that wanted to publish a weekly guide, while the TV stations were only making available daily guides. See European Court of Justice Joined cases C-241/91 P and C-242/91 P Radio Telefis Eireann (RTE) and Independent Television Publications Ltd (ITP) v Commission (Magill) [1995] ECR 743.

16 The 2004 case originates from the refusal by IMS Health to make available to competitors a very detailed system of classification of German pharmacies that was the standard producers of pharmaceuticals used for their marketing strategies. See European Court of Justice Case C-418/01, IMS Health GmbH & Co. OHG v NDC Health GmbH & Co. KG, [2004] ECR I-5039.


18 Another aspect of the case, concerning the bundling of Microsoft's Media Player software with its operating system, is discussed below in the sub-section on tie-ins and bundling.

19 See, for related discussion, Arhel (2006).
maintains the right incentives to invest/innovate. By pricing above the ECPR an equally efficient competitor of the dominant firm would be kept out of the market. This “squeezing” strategy represents a different abuse than refusal to deal, but the effects of the practice are the same.

_Tie-ins and bundling_

A tie-in is the sale of one product (the tying good) on condition that the buyer purchase another product (the tied good). Bundling refers to situations where a package of two or more of products is offered. If only the bundle is offered and not its individual components then bundling is called “pure”, otherwise it is “mixed”. With tying the quantity of the tied good is not predefined, while with bundling the “package” cannot generally be customized and the number of units of the bundled goods is fixed. Furthermore while tying is based on a contract, bundling may also originate from technological integration so that unbundling may not be that simple.

Mixed bundling, a situation where a bundle is discounted with respect to the price of its individual components, is abusive only in so far as an equally efficient competitor, offering only some of the components, could compete only at a loss against the discounted bundle. The analysis to be performed in order to identify an abuse is the same as that suggested for discounts and rebates.

Tying and bundling should not be considered abusive if the firm lacks market power in the tying good. Even when the firm has market power, establishing that a tie-in or a bundle is in fact abusive requires detailed analysis of its purpose and the market context. Sometimes two products are vertically related, with one being an input to the production of the other. In such circumstances, tying/bundling can reduce the overall net price paid by consumers (i.e. eliminating inefficiencies originating from double marginalization). Tying may be motivated by the firm's desire to maintain or increase its reputation for quality or reliability. This should not be considered abusive since it increases efficiency and market demand.

Tie-ins and bundling have been an important consideration in various cases relating to practices of the Microsoft corporation. In a case initiated in the early 1990s (the so-called "Licensing Case"), the U.S. Department of Justice and Microsoft entered into a consent agreement to settle the Department's allegations that Microsoft had violated antitrust laws by engaging in certain contractual practices with computer manufacturers. A central allegation made by the Department was that Microsoft:

"used monopoly power to induce personal computer (PC) manufactures into anticompetitive, long-term licenses under which they must pay Microsoft not only when they sell PCs containing Microsoft's operating systems but also when they sell PCs containing non-Microsoft operating systems. These anti-competitive long-term licenses have helped Microsoft maintain its monopoly. By inhibiting competing operating systems' access to PC manufacturers, Microsoft's exclusionary licenses slow innovation, raise prices, and deprive consumers of an effective choice among competing PC operating systems" (See U.S. v. Microsoft, "Competitive Impact Statement", Civil Action No. 94-1564, July 27, 1994).

In a subsequent case initiated in 1998 the Department of Justice alleged that Microsoft, by bundling Windows with Internet Explorer, was excluding Netscape and other potential
entrants from the browser market and was extending its monopoly in personal computer operating systems into internet browsing software.\(^\text{20}\) The case ended in 2001 with a settlement between the Department and Microsoft which, among other obligations, imposed on Microsoft a requirement to provide software developers with the interfaces needed to inter-operate with the operating system, allowing them to effectively compete with Microsoft. A number of aspects of the case are of interest. First, as Professor and former Judge Robert Bork (1998) argued at the time, Microsoft's bundling of its browser to the Windows operating system appeared to be aimed directly at excluding Netscape - which otherwise could have developed a competing operating system – from the market. For this reason, Professor Bork, who is not normally considered an advocate of activist antitrust policy except perhaps with respect to horizontal cartels, concluded that the case was much different from a pure bundling one and that Microsoft's bundling strategy was indeed dangerous to competition. Although Bork’s arguments were not fully reflected in the 2002 Final Judgment, they were instrumental in suggesting that the Microsoft's practices in this case were anticompetitive. Yet the case also shows that pure bundling, even by a quasi-monopolist, may nonetheless also provide consumer benefits (i.e. the convenience of purchasing complementary products as a package). In practice, it can be difficult to calculate these benefits and, more importantly, to assess how large they are in relation to the exclusionary effects.

In the course of the Microsoft proceedings, Professor Elhauge (2002) made the interesting suggestion that consumer benefits be calculated in an objective way and that pure bundling should be prohibited when it excludes an equally efficient competitor and its technological benefits are not demonstrated. With specific reference to the Microsoft case, he suggested that the bundling of the Windows operating system and Internet Explorer did not produce any technological benefit on the basis that bundling actually reduced the efficiency (speed) of the computer on which the new system was installed. While intrigued by the possibility of an objective measure of consumer harm, we are doubtful that a mechanical approach like the one proposed by Elhauge (2002) in this case is a sound measure of consumer harm, given the wide discretion involved in choosing a single characteristic of performance (speed).

The US proceedings relating to bundling of the Windows operating system and the Internet Explorer browser triggered wide discussion on the exclusionary effects of bundling. In the following years, possibly as a consequence of that discussion, antitrust authorities in a number of other jurisdictions initiated cases against Microsoft on broadly similar grounds. For example, pure bundling between the Windows operating systems and the "Media Player" function was deemed abusive in a 2004 European case.\(^\text{21}\) In that case, the European Commission determined that Microsoft was dominant in the tying market of operating systems and that there were no economies flowing from integration with the tied media player market because “distribution costs in software licensing are insignificant [and] a copy of a software programme can be duplicated and distributed at no substantial effort”. On the other hand, the Commission argued, “the importance of consumer choice and innovation regarding applications such as media players is high”; on this basis, the elimination of competition in media players was considered to produce negative effects on consumers.

The European Commission's decision is still under appeal. It is clear, however, that in pure bundling cases the evaluation of the trade off between technological integration, the


elimination of competition and consumer harm is intrinsically difficult because it requires an understanding of the possible directions of technical progress and an assessment of uncertain long-term consumer benefits. Furthermore, effective remedies that do not cause inconvenience to consumers are not easy to identify.

Other exclusionary conduct

The tension between antitrust enforcement and intellectual property rights is particularly severe in other type of exclusionary conduct, where the antitrust violation is strictly related to the way intellectual property rights are actually enforced, rather than to the superimposition of an antitrust violation (price fixing, output sharing, refusal do deal etc) over existing intellectual property rights. As an example I will refer to a US case, Shering Plough v FTC, and to an EC case, Astra Zeneca. These cases differ on the identified violation. However they are quite similar in the objectives pursued through the antitrust violation, i.e. blocking competition by generic manufacturers, and because the questions addressed in the case are directly linked to the exercise of intellectual property rights.

The Schering Plough case involved the settlement of a patent infringement litigation between Schering Plough, the manufacturer of “K-dur 20”, and two generic manufacturers of a bioequivalent drug. Schering Plough sued the generic manufacturers for patent infringement and settled by paying the two $ 60 million and $10 million respectively in exchange for them agreeing to stop producing and delaying the entry of generics in the market (the parties claimed that the payment was in exchange for a license given to Schering Plough by the two generic manufacturers, but the FTC argued that this was an excuse because the two manufacturers were excessively compensated for that). According to the FTC both Schering Plough and the generic manufacturers benefited from the settlement. On the other hand the consumer was damaged. The FTC first blocked the agreement in 2003 and the eleventh circuit annulled (vacated) the FTC decision, arguing that a “reverse payment” was fully within the “exclusionary potential of the patent”, implying that the settlement was in complete coherence with the exclusionary rights provided by the patent. The case is now in front of the US Supreme Court and the two antitrust authorities in the US, the FTC and the Department of Justice, differ on their interpretation of the merit of the case.

The FTC filed a brief with the Supreme Court alone, quite an unusual event and only the third time it happened in the last thirty years. At the invitation of the Supreme Court also the Department of Justice submitted its own views, arguing against the FTC that a “public policy favouring settlements and the statutory right of patentees to exclude competition within the scope of their patents, would potentially be frustrated by a rule of law that subjected patent settlements involving reverse payments to automatic or near-automatic invalidation”22. The department of Justice does not articulate with precision what the legal standard should be in such circumstances. Unfortunately the Supreme Court denied the Writ of certiorari and will not hear the case.

The real problem is that much litigation on patents originates from the lack of rigor in patent granting. Indeed all matters related to patent validity have a very strong competition implications because even fraudulent patents restrict competition and sometimes substantially. Ever since the 1965 US Supreme Court decision in Walker Process Equipment Inc. v. Food Machinery and Chemical Corp. it has been recognized in the United States that a

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22 See the DOJ brief at http://www.usdoj.gov/atr/cases/f216300/216358.htm#e
monopolization case could be made against a fraudulently achieved patent. On the other hand, according to First (2007) there have been no cases in the United States challenging invalid patents under the antitrust statutes.

In the European Union the Commission has actively intervened with antitrust provisions against the anticompetitive effects originating from invalid or fraudulent patents. In 2005 the Commission fined Astra Zeneca EUR 60 Million because it had abused the dominant position it held with its product “Losec” in the market for proton pump inhibitors (PPIs) by misusing public procedures in a number of EEA States with the objective to exclude competition from generic rivals.

Astra Zeneca abuse consisted in misleading representations before patent offices which led them to grant Astra Zeneca an extension of the term of patent protection, delaying the entry of cheaper generic versions of Losec (with costs for health systems and consumers). Furthermore Astra Zeneca obtained the deregistration of its market authorisation for Losec capsules in several Nordic countries, thus removing the reference market authorisation on which generic firms rely at the time to enter or remain on the market. These type of abuse represent the Commission’s first decision in relation to the practice, quite common among drug producers, to extend the period of patent protection by follow on innovations that do not require much research and do not add much in terms of healing capacity. The case is still under appeal.

Parallel Trade, Exhaustion Regimes and Competition Concerns

Given that countries have different incomes, different preferences, in short different elasticities of demand, the incentive of a company with enough market power as to be able to discriminate is to set prices according to the ability to pay of different consumers, making sure at the margin that prices never fall below marginal costs. Such discrimination is welfare enhancing in so far as it leads to greater output. It also leads to greater profits for the companies involved and there are no reasons why companies, should they be able to prevent arbitrage, would not voluntarily engage in it. Indeed, given that the cost structure of research intensive products like pharmaceuticals is so heavily tilted towards fixed costs it is an optimal strategy on the part of producers to discriminate, setting prices according to the different elasticities of demand which characterize the various geographical markets.

If price differentials exist and parallel trade is not impeded, every trader of every country would purchase from the low price source of supply; such concentration of demand in the low price country, would influence the decision making of the firm, that would introduce less discrimination than it would consider optimal.

As long as retail prices are fixed, like it is the case with price regulated pharmaceuticals, a retailer faces a very strong incentive to reduce his/her wholesale purchasing price. Since wholesale prices may vary from country to country, an obvious alternative is to purchase pharmaceuticals from wholesalers in a low-price country and import them for sale in a high-price country. The primary effect of parallel trade is that it increases the profitability of wholesalers and retailers. Parallel trade may or may not lower the prices for pharmaceuticals in the high-price country. If the regulator is able to observe the prices paid by the pharmacist for the imported pharmaceuticals, it may be able to adjust the regulated retail price accordingly, otherwise only the parallel trader would gain.

23 Note that EC legislation has recently been modified to address this problem: since the October 30 2005 it is no longer be possible to prevent generic entry by withdrawing a European reference product.
According to economic theory, absolute territorial restrictions should not be considered anticompetitive when they lead to greater consumer surplus. Such conclusion is by the way coherent with most competition laws that protect the competition process by implementing a consumer welfare standard. Market segmentation, even though it reduces intra-brand competition, can in fact increase the degree of competition between brands, stimulated by the increase in sales efforts associated with the granting of an absolute territorial restriction. Absolute territorial restrictions can also facilitate the entry of new firms: often in order for new products to enter into new markets, the key is heavy sales promotion rather than low prices.

However absolute territorial restrictions can also have undesirable effects especially when they are put in place by most firms in an industry characterized, like the pharmaceutical industry, by high barriers to entry. In these circumstances, absolute territorial restrictions may be used by competitors to segment markets that structurally have different degrees of competition, making sure that the benefits of greater competition be strictly limited to those markets where it already exist and are not exported elsewhere. The outcome of a network of absolute territorial restrictions, or more in general of vertical agreements, such as for example resale price maintenance, exclusive dealing, tie-in sale agreements, or quantity forcing, is frequently to reduce the degree of inter brand competition, generally not leading to a full cartel, but to a strong reduction of competition on some of the most important dimensions on which firms compete, for example on pricing.

Absolute territorial protection can also be restrictive when a dominant firm imposes it. This can be so for the same collusive reasons that were already mentioned, since dominance does not imply a full monopoly, but just a firm sufficiently large relatively to the market in which it operates and a reduced competition by smaller competitors. Furthermore, should the downstream market be difficult to enter, a dominant firm can use absolute territorial protection, when associated with exclusive dealing, to raise rivals costs, by making entry by competitors more costly.

Parallel trade is impeded by the geographic extension of the associated IP rights. In principle exhaustion principles cannot be overcome through antitrust enforcement.

Indeed in Australia, having recognized that huge unjustified price differences existed between different countries, parallel trade for recorded music was liberalized in 1998. As a result, the Australian competition and consumer commission (ACCC) concluded a number of cases against the majors because they impeded parallel trade. In other words, impeding parallel trade became an antitrust offence only in so far as parallel trade was liberalized.

In the European Union exhaustion is Union wide and impeding parallel trade has been considered an antitrust violation almost per se. Indeed, also as a result of the competition being an instrument for pursuing the creation of the internal market, the Commission has consistently decided that any absolute territorial restriction (which is equivalent to impeding parallel trade) represents a violation of the rules against restrictive agreements.

24 The European Commission has consistently favored parallel trade which led to convergence of national regimes. In fact Council Directive 89/104/EEC states that single member States cannot adopt rules that introduce the principle of international exhaustion for trademarks. The reason for this is that if member States would have a different regime for exhaustion, some of them a national one while some others international, then those countries that continue to have national exhaustion system would have to introduce trade restraints in order to protect their markets from imports from member States that have a broader regime, a situation considered to be contrary to the objective of unifying Europe into a single market.
In general allowing parallel trade leads to price uniformity. On the other hand, in the presence of price regulation, parallel trade only very indirectly may lead to price uniformity, because prices are not under the control of the firm. Indeed in a recent judgment of September 27 2006 the Court of First Instance partly annulled a Commission decision that forced parallel trade for GlaxoSmithKline price regulated drugs. The judgment, which is the first one to question the legitimacy of parallel trade, concluded that the Commission did not take proper account of the specific nature of the pharmaceutical sector where prices of medicines are not freely determined by supply and demand, but are set or controlled by the member States with very pervasive regulations. For that reason, the Court ruled that it cannot be presumed that parallel trade tends to reduce prices. It might do so under circumstances that need to be identified on a case by case basis, a process that the Commission failed to follow.

The Commission, while it has always enforced the antitrust provisions to promote parallel trade within the Union, has generally allowed parallel trade to be impeded between Europe and third countries. In this respect, the Court of First Instance went one step further, suggesting that competition law can impose parallel trade, even if absolute territorial protection is perfectly in line with the exhaustion regime actually in place. On December 16 1999, in the Micro Leader Business case, the Court argued that, although Microsoft might have been justified under copyright law to prohibit its Canadian distributors from exporting into third countries, such justification is not an absolute one. Indeed the Court, annulling the Commission decision, ruled that in principle the prohibition of parallel trade under exhaustion is also subject to an antitrust scrutiny. According to the Court antitrust enforcement could impose parallel trade even if it is prohibited under exhaustion principles, of course with a proper motivation. The principle was not articulated further.

In any case, the fact that under competition principles an absolute territorial restriction can sometimes be restrictive introduces a tension between antitrust interventions and national exhaustion regimes. If a patent is granted under a national exhaustion regime, than the patent holder is confident to be able to segment national markets and to impede parallel trade. However such impediment can be found to be anticompetitive under antitrust law, under the theory that antitrust laws intervenes not on the existence of the right, that is not questioned, but on its exercise, that might be anticompetitive. If in the specific circumstances of a case, impeding parallel trade is considered anticompetitive, than a firm, in order to comply with competition law, has to allow parallel trade. In this way, the exhaustion regime ceases to be national and becomes international. According to the Court of First Instance, antitrust enforcement can thus intervene directly on the definition of the boundaries of intellectual property rights.

**Conclusions**

As this paper has tried to document, antitrust enforcement can substantially intervene on intellectual property matters, even though there is no common view on how far antitrust should/could intervene and convergence among jurisdictions is far from being achieved. Even within a same jurisdiction like the United States, antitrust agencies may differ quite substantially on the approaches to be taken.

The first point is that antitrust violations in the field of intellectual property rights are particularly difficult to detect because on controversial issues, like cross licensing, patent pools or refusal to deal there are no per se prohibitions and all decisions are on a case by case basis. Furthermore, more than in any other field of antitrust enforcement, decisions by
competition authorities may directly affect the incentive to innovate and therefore antitrust authorities have to exercise great care in what they do. Finally especially in the pharmaceutical industry, one of the great customers of patent offices, regulation more than markets is what drives companies’ behavior. In particular, in the case of pharmaceuticals, antitrust enforcement has been particularly concerned with promoting the development of generics, accompanying the savings efforts of health care authorities.

In all jurisdictions, antitrust enforcement with respect to intellectual property rights addresses restrictions of competition that go beyond what patents, copyright and trademarks generally allow. For example price fixing, coordinated output restrictions or foreclosure of innovation are the most important practices to be prohibited by antitrust provisions. Among these, foreclosure of innovation is the most controversial. For example the European Commission in a number of cases, Magill, IMS and more recently Microsoft, has suggested that a dominant company abuses its dominant position by refusing access to an essential facility (protected by an intellectual property right) in circumstances when a new product is denied to consumers. The case law developed so far in Europe does not identify precise criteria for defining what is actually “new”. From the existing case law, it is only possible to conclude that the Commission does not impose an obligation to license only when the licensee would produce just a replica of the IP protected product/service. What is missing in the Commission’s case law on refusal to deal, is some indication on the appropriate pricing for the use of the IP rights protected essential facility. Economic theory has developed some techniques to identify the “non abusive” level of access pricing. However existing case-law is completely silent on the matter.

Much more straightforward are situations where market foreclosure originates from practices that directly impede the entry of competitors, especially at times when intellectual property rights are no longer available. The problem that arises is the extent of the use of presumptions. However there are no reasons to abandon the general approach that there is a proof of a violation when there is no other explanation for a given behavior than it abusive objective. For example, this may be the case for reverse payments that have no other explanation than to avoid a judgment of patent nullity. Indeed, as First (2007) recalls, a monopolization case could be made against a fraudulently achieved patents.
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