1-2008

Rationalising the regime of compulsory patent licensing by the essential facilities doctrine

Kung-chung LIU

Singapore Management University, kcliu@smu.edu.sg

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Kung-Chung Liu*

I. Introduction

Where intellectual property rights (IP) owned by dominant undertakings are indispensable and impossible for other market players to replicate or acquire, the refusal to grant license to use such IP may cause serious harm to vital public interests, such as the supply of life-saving drugs, of technology that protects the environment, the compliance with de jure or de facto industry standards and the preservation of competition in markets with network effects or strong need for compatibility and interoperability.

The conflict may be resolved by resorting to remedies extraneous to IP such as competition law, or to compulsory licensing. This paper will deal with the competition perspective of refusal to license IP through a properly defined essential facilities doctrine. It concludes that it is imperative to add public policy considerations to the regime of compulsory patent licensing of the TRIPs Agreement, as otherwise the highly heterogeneous and arbitrary practices of WTO Members could easily lead to trade disputes.

II. Paris Convention and TRIPS Agreement

Art. 5A Paris Convention allows the grant of compulsory licenses under undefined conditions, and Art. 31 TRIPs Agreement does not define the substantial grounds where "use without authorization of the right holder" may be granted, either. Art. 31 TRIPs Agreement provides strict procedural safeguards, though[1]. The lack of substantive grounds cannot be remedied by interpretation or reading between the lines, whether by a Member of WTO or by the Dispute Settlement Body of WTO, no matter how well-reasoned it is. Otherwise, the sovereignty of individual Members will be easily jeopardized and something other than the consensus reached can be read into the TRIPs Agreement; no country will negotiate seriously and

* Research Fellow, Institutum Iurisprudentiae, Academia Sinica/Professor, Institute of Law for Science and Technology, National Tsing Hua University (joint appointment). This author would like to thank Dr. Christopher Heath for his invaluable comments on this paper.

[1] Daniel Gervais, "The TRIPs Agreement—Drafting History and Analysis" 2.305 (2nd ed., 2003).

sincerely anymore. Consequently, Members are given fairly free hand to determine the grounds for granting compulsory licensing[2], which does not mean that their governments may grant compulsory licenses on frivolous grounds or no grounds at all: Only social and collective interests justify the granting of compulsory licenses.[3]

III. State Practices

1. By the early 1990s, about 100 countries had some form of compulsory patent licensing regime, although a study of the United Nations Conference on Trade and Development (UNCTAD) in 1975 showed that developing countries seldom made use of Art. 5A Paris Convention.[4] Contrary to the common perception, developed countries have been frequent users of the regime, for example Canada between 1969 and 1992 had frequently resorted to compulsory patent licensing, with a total of 613 licenses granted. Also the US Federal Courts made aggressive use of compulsory patent licensing in order to regulate misuse of patent rights and antitrust violations involving the exercise of such rights. Such a practice was continued by the Federal Trade Commission often in consent decrees bearing on corporate mergers and acquisitions.[5] In the following, this paper will look at the regimes in the UK, Germany, and Taiwan.

2. Already the **UK** Patents Act 1883 recognised compulsory licenses. The Patents Act 1977 now gives the comptroller the power to grant a compulsory licenses after more than three years from the patent grant (1) following a report of the Competition Commission that an undesirable monopolistic situation exists or an anti-competitive practice is operating against the public interest (Sec. 51), (2) for Crown use (Secs. 55- 59), or (3) where, either, domestic demand for a patented product is not being met on reasonable terms[6], where the exploitation of another patented invention, which is technically and economically important, is being

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[2] Sandy Harnisch, "Die Zwangslizenz im südafikanischen und deutschen Patentrecht", 60 （2006）.

[3] Nuno Pires de Carvalho, "The TRIPs Regime of Patent Rights," 31.4 (2nd ed., 2005).

[4] Michael Blakeney, "Trade Related Aspects of Intellectual Property Rights: A Concise Guide to the TRIPs Agreement" 8.20（1996）.

[5] Jerome Reichman/Catherine Hasenzahl, "Non-Voluntary Licensing of Patented Inventions, UNCTAD-ICTSD Project on IPRs and Sustainable Development" Issue Paper No. 5 at 2, 4, and 5 (2003).

[6] The European Court of Justice found on 18 February 1992 that what sec. 48(3)(b) and (c) of the Patents Act 1977 once allowed, i.e. whenever the needs of the domestic market are being satisfied wholly or in part by importation the comptroller may order the grant of compulsory license, had an effect equivalent to quantitative restrictions on imports within the meaning of Article 30 EEC. (See E.C. Commission v. United Kingdom (Spain intervening) Re Compulsory Patent Licences (Case C-30/90) 【1992】2 C.M.L.R. 760). That decision led to a change in the Patents Act 1977.

prevented or hindered; or in the case of unreasonable conditions imposed upon licensing of the patent, prejudicing the development or establishment of commercial or industrial activities in the UK. The order granting the license is subject to review by the Patents Court. The British compulsory license system is directed at one or another form of insufficient exploitation and requires careful investigation of the circumstances before granting, and therefore is not much used. Between 1959-1968, an average of 1.5 applications per year for compulsory licenses were filed under the general provisions of the Patents Act; only two were granted. For the special compulsory license over food and medicine, an average of 4.1 applications per year were made; altogether four were granted.[7] The last reported case of a granted compulsory license dates back to 1971.[8]

3. There has been a drastic change in viewing compulsory patent licensing in **Germany**. The German Patent Act of 1911 for the first time recognized the granting of compulsory license by the courts. Between 1923 and 1943, there were 295 applications for compulsory licensing and 25 grants.[9] Since then, according to the statistics of the Federal Patent Court, between 1961 (the year in which the court was founded) and 2004, there were only 20 applications and one grant (1994), which was later annulled (1996) by the Federal Supreme Court in the "Polyferon" case. It is commonly accepted in the literature that the practical meaning of compulsory patent licensing lies in the psychological effects that help to bring about voluntary licenses.[10]

According to Sec. 24 German Patent Act, there are two kinds of compulsory licenses, one for reasons of the public interest[11], the other for dependent patents. The former also comes into play where the patentee does not exploit the patented invention or does not work it predominantly in Germany (importation equals local working) and an adequate supply of the

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[7] See Cornish/Llewelyn, Intellectual Property, 294, footnote 81（5th ed., 2003）.

[8] See Tahir Amin, Practical Experiences with Compulsory Licensing in the UK, Asean Workshop on Compulsory Licensing to Increase Access to Antiretrovirals（ARVs）and Diagnostic Reagents, Kuala Lumpur, Malaysia 2006.

[9] Constanze Kübel," Zwangslizenzen im Immaterialgüter- und Wettbewerbsrecht" 93（2004）.

[10] Benkard/Rogge, "Patentgesetz, " § 24, Rdnr. 4（10th ed., 2006）; Busse/Schwendy, "Patentgesetz, " § 24, Rdnr. 16（6th ed., 2003）; Kübel, ibid., at 95

[11] The "Polyferon" decision shed some light on the term "public interest": it is a general legal clause that needs to be substantiated by jurisprudence. It is subject to constant change, and so is the weighing of the interests of the patentee against those of the general public. Consequently, the finding of public interest in "the better supply of the domestic market"with the purpose of "preventing jeopardizing the whole industry sector", "avoiding closing down business or massive laying off of workers", "strengthening the security of business", "enhancing public health," and "maintaining continual supply of electricity" by earlier court decisions cannot be drawn upon without a critical review when deciding whether public interest is at stake., Federal Supreme Court (BGH), 5 December 1995,, GRUR 1996, 190, 192..

patented products for the domestic market is not ensured. A compulsory license can be granted with limitations and on conditions, and against reasonable remuneration.

4. Secs. 76 (1), (2) and (5), 78 (5) Taiwanese Patent Act provide compulsory licenses for national emergencies, not-for-profit use of a patent for the enhancement of public welfare, failure to reach a licensing agreement with the patentee under reasonable commercial terms and conditions within a considerable period of time, remedying restriction of competition and where a second patent of considerable economic significance is dependent upon another. As Taiwan is a country famed for its world-class OEM (original equipment manufacturers) and ODM (original design manufacturers) capacities in electronics and information technology industry, and plays a critical role in the worldwide proliferation of CD-Rs, unsurprisingly the first application for compulsory license filed in 2002 related to CD-R patents. Since then, there have been a further two applications. The first and the second application were filed by local CD-R manufacturers for CD-R patents owned by Philips, after witnessing the first application lead to a compulsory license and only to be later annulled, the second application was withdrawn. The third application was filed by the Department of Health (DOH) for a patented drug[12]. Two compulsory licenses (the Philips case and the Tamiflu case) were granted by the Taiwanese Intellectual Property Office (TIPO). All three applications and the two licenses were against foreign patentees. As this paper revolves on competition aspects of refusal to license patents, the following discussion will focus on the Philips case.

IV. The Philips Case

1. Philips is the owner of five Taiwanese essential patents related to the manufacture of CD-Rs. When entering into licensing agreements with various Taiwanese companies, the royalty rate was fixed at "[3]% of the net selling price with a minimum of 10 Yen [per licensed product]." Because the market price of CD-Rs at the time the licensing agreements were entered into was approximately 300 Yen, any difference between [3]% of the net selling price and 10 Yen would have been negligible at that time. As the market price of CD-Rs has

[12] Out of fear that an epidemic of avian flu might break out in Taiwan, the DOH on 31 October 2005 filed an application for a compulsory license to use Tamiflu, a patented drug owned by Gilead Sciences, Inc. USA and exclusively licensed to F. Hoffmann – La Roche Ltd, Switzerland. After two hearing sessions with the applicant and the patent holders, TIPO approved the application on 2 December 2005 to manufacture Tamiflu capsules for a period until 31 December 2007. Thanks to the fact that an avian flu epidemic did not break out and no case of avian flu occurred in Taiwan, the compulsory license had not been implemented when it expired.

meanwhile dropped considerably, the minimum royalty of 10 Yen represents over half of the selling price. Taiwan CD-R manufacturers have voiced repeated demands for adjustment of the royalty, but their demands have repeatedly been denied. While Philips was thus active in the technology market (licensing of technology) and, to some extent, also in the market of manufacturing the technology, Philips' licensees were active in the downstream manufacturing market only. The distinction between upstream technology and downstream manufacturing market is important for the following analysis[13].

In July 2002, Taiwanese CD-R manufacturer Gigastorage, once one of Philips' licensees,, filed an application for compulsory licensing of the five patents owned by Philips. The TIPO set up a committee with external members to examine the application and in 2004 reached a decision which permitted the applicant to use the five patents primarily to satisfy the needs of the domestic market until their expiry dates (between 26 January 2007 and 19 December 2009).[14] TIPO did not touch upon the sensitive issue of appropriate compensation, since the object of the application for compulsory licensing was limited to the granting of such, rather than the calculation of compensation. However, no agreement on the calculation of compensation has ever been reached between the two parties. The administrative complaint brought by Philips was rejected by the Ministry of Economic Affairs (MOEA) in June 2006. Philips thereupon filed an appeal with the Taipei Administrative High Court. While this suit was still pending, as a result of parallel litigation in the US, Gigastorage and Philips entered into a settlement agreement on 29 October 2007（see infra 2）, settling all of Gigastorage's debts towards Philips for the CD-R production up to and including 23 September 2007.[15]Still, Philips wanted to continue administrative litigation in Taiwan so as to avoid precedential effect of TIPO's decision[16]. On 13 March 2008, the Taipei Administrative High Court overturned the decisions of TIPO and MOEA on the ground that when determining "reasonable commercial terms", TIPO failed to take into consideration factors other than the calculation of the royalty rate, in particular profit concerns of licensor and licensee, shared

13 The above distinction of markets follows the approach taken by the Taiwanese Fair Trade Commission and the US Antitrust Guidelines 1995, p. 8 ("goods markets" and "technology markets").

14 For more details of the case see Kung-Chung Liu, "Interface between IP and Competition Law in Taiwan," 8 The Journal of World Intellectual Property, 738-741 (November 2005).

15 European Commission, TBR Investigation Report, Report to the Trade Barriers Regulation Committee, 30 January 2008 (hereinafter TBR Report), which is available at: http://ec.europa.eu/trade/issues/respectrules/tbr/cases（last visited on 2 June 2008）, Executive Summary, para. 6.

16 In a similar vein, on 5 May 2006 Philips filed with TIPO applications to annul the compulsory licensing on the ground that the licensee exceeded the limit of supply "primarily for domestic market" and the license should be retroactively annulled. On 31 May 2007, TIPO decided to annul the compulsory license with immediate effect rather than retroactively.

risks, renown of the technical brand, market demand, scope and duration of the license, licensed technology, competition within the industry, market conditions for licensing and other terms of licensing.[17] In view of the settlement between Gigastorage and Philips, TIPO decided not to appeal the decision[18], which made the case final. Still, TIPO disagrees with the Taipei Administrative High Court on at least two counts. First, because the compulsory license has only a case-by-case effect, Philips should have lost its standing to pursue the case when it settled with Gigastorage. Second, the calculation of the royalty rate should be the core for determining "reasonable commercial terms".

2. The Philips case has its ramifications in international trade law. In 2002, Philips US filed complaints with **US International Trade Commission** (USITC) in order to stop Gigastorage from exporting CD-Rs to the US market, alleging violations of section 337 of the Tariff Act of 1930. On 24 October 2003, the Administrative Law Judge (ALJ) of USITC issued its final initial determination (ID), finding no violation of section 337 because all of the asserted patents were unenforceable due to patent misuse by Philips. On review, the Commission affirmed the ALJ's conclusion, but on the ground that Philips' practice of mandatory package licensing constituted a tying agreement between a license for essential and non-essential patents. Philips appealed the Commission's decision before the United States Court of Appeals for the Federal Circuit (the Federal Circuit) which on 21 September 2005 reversed the Commission's decision and remanded the case for further proceedings. The Supreme Court denied a petition brought by Gigastorage for a writ of certiorari on 19 June 2006. On 5 February 2007, the USITC Commission reversed the ALJ's findings of patent misuse, found a violation of section 337 and imposed a general exclusion order prohibiting the entry of CD-Rs made by Gigastorage.[19]

3. On 15 January 2007, Philips filed a complaint with the **European Commission** alleging that Taiwan maintained trade barriers by granting compulsory licenses inconsistent with Arts. 28 and 31 TRIPS Agreement. The Commission concurred with Philips essentially for the following reasons:

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[17] Taipei Administrative High Court Decision Sutze No. 2783（2006）.

[18] According TIPO's press release on 10 April 2008, which is available at:hppt://www.tipo.gov.tw（last visit on 2 June 2008）

[19] USITC, 337-TA-474. Notice 1170697224（5 February 2007, available at http://www.usitc.gov（last visit on 2 June 2008）.

First, Sec. 76 Taiwanese Patent Act permitted the grant of a compulsory license upon a mere refusal to license on reasonable commercial terms and conditions, thereby being inconsistent with the exclusive rights granted by a patent under Art. 28 TRIPs Agreement[20]. Second, "reasonable commercial terms and conditions" in accordance with Art. 31(b) TRIPs Agreement should be interpreted by reference to the market rather than individual operators. Third, the proportionality requirement of Art. 31(c) TRIPs Agreement requires the identification of the purpose for granting the compulsory licence, and a limit on its scope and duration. TIPO's decision did none of this[21]. Finally, Art. 31(f) TRIPs Agreement imposes an obligation to monitor the implementation of a compulsory licence, which TIPO had failed to do[22].

4. It is not inconceivable that the above dispute dented Taiwan's position in the CD-R world market, of which in 2003 it held a market share of 80%. However, Taiwan's total output decreased sharply since then, to 36% in 2004, 33% in 2005, and 28% in 2006.[23] Having no other choice, Gigastorage after the revocation of the compulsory licence on May 31, 2007 ceased manufacturing CD-Rs in Taiwan and relocated its production to countries where Philips has no patents and cannot charge any royalty. In addition, Gigastorage paid a huge settlement fee of around US$ 31 millions, over one third of its capital, which was a severe financial blow.[24] Another Taiwan-based CD-R manufacturer, Prodisc, ranking the fourth largest of its kind in the world, in August 2007 was also forced to discontinue the production of CD-Rs in Taiwan, due to Philips' unwillingness to reduce the royalty rate in proportion to falling prices.[25]

The settlement between Philips and Gigastorage did not persuade Princo, another Taiwanese CD-R manufacturer who was one of the two Respondents of the USITC section 337 case brought by Philips, to make peace with Philips. Instead, it appealed the USITC Commission decision on 5 February 2007 before the US Federal Circuit, a suit that is still pending. The many legal battles that smaller CD-R manufacturers have lost in the frontline of competition

[20] TBR Report, Executive Summary, para. 10; IV. Legal Analysis, para. 107.
[21] TBR Report, IV. Legal Analysis, paras. 148, 151,154.
[22] TBR Report, IV. Legal Analysis, para. 171.
[23] TBR Report, II. Factual Background, para. 27.
[24] Although the actual sum of the settlement fee is kept confidential, its rough figure can be calculated from the loss Gigastorage had to disclose according to Taiwanese Stock Exchange Act. Gigastorage reported a NT$ 3.42 loss per share for the third quarter of 2007, in which the settlement was reached. NT$ 3.42 (loss per share) times the registered capital of NT$ 3 billions equals NT$ 940 millions. Converted to US$ 31 millions at the 30 to 1 exchange rate.
[25] See B2, 7 May 2008 of United Daily and Economic Daily News（both published in Taiwan in Mandarin）.

law in Taiwan,[26] did not prevent heavy-weight CD-R manufacturers in Taiwan, such as Prodisc, CMC and Ritek from stepping forward and filing complaints against Philips with the Taiwanese Fair Trade Commission (TFTC) in September 2007, alleging that Philips abused its dominant market power – also a claim that is still pending.

V. The Worldwide Acceptance of the Essential Facility Doctrine

In the last thirty years, price regulation by competition authorities has given way to obliging dominant firms in the network industries to provide "interconnection" services to competitors.[27] It is fair to say that, "under the new paradigm, the regulator plays a far more limited role…In effect, the agency becomes a limited jurisdiction enforcer of antitrust principles, applying a version of 'essential facilities' doctrine..."[28]

1. In the **US**, a concerted refusal to deal as the result of conspiracy among competitors could violate Sec. 1 Sherman Act[29], while unilateral refusal to deal by one dominant company could in exceptional cases constitute "monopolization" and violate Sec. 2 Sherman Act. Five US Supreme Court decisions held so[30]. However, the five cases remained close to the facts and did not provide any clear general guidance or legal standard on how Sec. 2 of the Sherman Act is

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[26] In 2000, several Taiwan –based CD-R manufacturers filed complaints with Taiwanese Fair Trade Commission against Philips, accusing that Philips violated Article 10 No. 2 & 4（abuse of monopolistic market power by demanding excessively high royalties despite the falling prices）and Article 14（cartel conspiracy with competitors, Sony and Taiyo Yuden, by jointly licensing pooled patents and fixing a uniform royalty rate）. After repeatedly losing the cases with the Fair Trade Commission（for more details see Kung-Chung Liu, ibid., at 748-750）, Philips got a total reverse from the Taipei Administrative High Court and was acquitted of all charges, which was upheld by the Supreme Administrative Court. The main reasons for such a high drama was first that the Taipei Administrative High Court opined that Philips, Sony and Taiyo Yuden, although collectively forming a monopoly and abusing power by charging prohibitively high royalties, were not horizontal competitors because their patents complemented each other; therefore Fair Trade Commission erred on including a count of cartel while calculating the monetary penalty for Philips; and second that the Fair Trade Commission's decision on monetary penalty was itself an inseparable one which had be annulled in toto.

[27] William Fisher, "Promises to Keep, Technology, Law, and the Future of Entertainment" 176（Stanford University Press 2004）.

[28] Joseph Kearney/Thomas Merrill, "The Great Transformation of Regulated Industries Law," 98 Columbia Law Review 1361 (1998).

[29] US v. Terminal Railroad Association of St. Louis, 224 US 383(1912); Associated Press v. US 326 US 1(1945)).

[30] Eastman Kodak Co. v. Southern Photo Materials Co. (the former terminated the distributionship of the latter, 273 US 359 (1927)), Lorain Journal Co. v. US (the only local newspaper refused to sell advertising space, 342 US 143(1951)), Otter Tail Power Co. v. US (a regulated monopoly refused to sell power at wholesale rate or to provide interconnection to other power generators, 410 US 366(1973)), Aspen Skiing Co. v. Aspen Highlands Skiing Corp. (the former terminated joint ticket offering with the latter without business justification, 472 US 585(1985)), Eastman Kodak Co. v. Image Technical Services, Inc.(Kodak sought to prevent independent after service providers from having access to spare parts for its copying machines, 504 US 451(1992)).

to be applied with respect to refusals to deal. Lower courts then developed certain general doctrines to describe situations where a refusal to deal would fall foul of Sec. 2. The “essential facilities doctrine” is one of the two main doctrines in this respect[31].The leading case for this doctrine is MCI Communications v. AT&T, adjudicated by the 7th Circuit in 1983,[32] which sets out a four-part test for an essential facility claim:(1) control of the essential facilities by a monopolist; (2) competitor’s inability practically or reasonably to duplicate the essential facilities; (3) the denial of the use of the facilities to a competitor; and (4) the feasibility of providing the facilities. A monopolist by denying access to the essential facilities can extend its monopoly from one stage of production to another, and from one market into another. In such cases, firms controlling essential facilities bear the obligation to make the facilities available to their competitors on non-discriminatory terms. Although the essential facilities doctrine has been criticized by influential writers such as Areeda, Hovenkamp and Posner,[33] and has not yet been recognized by the Supreme Court, several Federal Circuit Courts do endorse and apply the essential facilities doctrine restrictively.[34] The Supreme Court’s reservations about the essential facilities doctrine may stem from the fact that generalist courts lack the expertise, resources and technical proficiency needed to grasp economic issues of great complexity, and arrive at equitable results[35].

In Verizon Communications Inc. v. Law Offices of Curtis V. Trinko, LLP (*Trinko*), the Supreme Court reiterated its reservations towards the essential facilities doctrine and took a very narrow view of the indispensable requirement, namely unavailability of access to the "essential facilities" : unavailability of access to the "essential facilities" should be denied where a state or federal agency has effective power to compel its sharing and to regulate its scope and terms. For this reason the 1996 Telecommunications Act's extensive provision for access made the application of the doctrine unnecessary[36]:

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[31] Pierre Larouche, Competition Law and Regulation in European Telecommunications, 173-175 (2000).
[32] MCI Communications Corp. v. AT&T Co., 708 F. 2d 1080, 1132-33 (7th Cir. 1983).
[33] For more details see Kung-Chung Liu, ibid, at 759.
[34] Alaska Airlines Inc. v. United Airlines Inc. 948 F. 2d 536 (9th Cir. 1991); Laurel Sand & Gravel, Inc v. CSX Transportation, Inc 924 F. 2d 539 (4th Cir. 1991); Covad Communications Co v. BellSouth Corp 299 F.3d 1272 (11th Cir. 2002); Paladin Associates, In. v. Montana Power Co. 328 F.3d 1145 (9th Cir. 2003).
[35] In Aspen Skiing v. Aspen Highlands Skiing, 472 U.S. 585 (1985), footnote 44, the Supreme Court held: Given our conclusion that the evidence amply supports the verdict under the instructions as given by the trial court, we find it unnecessary to consider the possible relevance of the "essential facilities" doctrine, or the somewhat hypothetical question whether non-exclusionary conduct could ever constitute an abuse of monopoly power if motivated by an anticompetitive purpose. If, as we have assumed, no monopolist monopolizes unconscious of what he is doing, that case is unlikely to arise.
[36] 540 U.S. 398 (2004).

"We conclude that Verizon's alleged insufficient assistance in the provision of service to rivals is not a recognized antitrust claim under this Court's existing refusal-to-deal precedents. This conclusion would be unchanged even if we considered to be established law the "essential facilities" doctrine crafted by some lower courts. We have never recognized such a doctrine, and we find no need to either recognize it or repudiate it here. It suffices for present purposes to note that the indispensable requirement for invoking the doctrine is the unavailability of access to the "essential facilities"; where access exists, the doctrine serves no purpose. Thus, it is said that "essential facility claims should be denied where a state or federal agency has effective power to compel sharing and to regulate its scope and terms." The respondent believes that the existence of sharing duties under the 1996 Act supports its case. We think the opposite: The 1996 Act's extensive provision for access makes it unnecessary to impose a judicial doctrine of forced access. To the extent the respondent's "essential facilities" argument is distinct from its general § 2 argument, we reject it. "[37]

The Trinko case explicitly mentions the Aspen Skiing case, in which the refusal to continue an existing contractual relationship compensated at retail price violated Sec. 2 of the Sherman Act, as the only exception to the right to refuse to deal with other firms ("Aspen Skiing is at or near the outer boundary of § 2 liability"[38]). In contrast thereto, refusal to commence dealing in products that had never been offered would presumably not violate Sec. 2 of the Sherman Act. The Trinko case has been rightly criticized as a myth assuming all markets are contestable[39] and therefore "backward-looking and a late success of the traditional Chicago School."[40] However, the Trinko case does not rule out the space, very limited as it might be, for lower courts to continue applying the essential facilities doctrine for refusals to continue an existing contractual relationship.

When looking for statutory instruments implementing this doctrine, the 1996 US Telecommunications Act comes to mind. The Act imposes a large number of duties upon incumbent local exchange carriers (LECs)--above and beyond those basic responsibilities it

[37] 540 U.S. 408; 50 Antitrust Bulletin, 4 (Winter 2005); and, 73 Antitrust L.J. 1 (2005-2006) are dedicated to the discussion of the Trinko case.

[38] 540 U.S. 406.

[39] Robert Jablon/ Marks Hegedus/Sean Flynn, "Dispelling myths: A real world perspective on Trinko," 50 Antitrust Bulletin, 590 (Winter 2005).

[40] Josef Drexl," IMS Health and Trinko—Antitrust Placebo for Consumers Instead of Sound Economics in Refusal-to-Deal Cases," 35 IIC 797 (2004).

imposes upon all carriers, such as assuring number portability and providing access to rights-of-way.[41] Under the sharing duties of Sec. 251(c) (3), incumbent LECs are required to offer three kinds of access. Perhaps most intrusive is the duty to offer access to unbundled network elements (UNEs) on "just, reasonable, and non-discriminatory" terms, a phrase that the Federal Communications Commission (FCC) has interpreted to mean a price reflecting long-run incremental cost.[42] A rival can interconnect its own facilities with those of the incumbent LEC, or it can simply purchase services at wholesale rates from the incumbent and resell them to consumers. [43] The Act also imposes upon incumbents the duty to allow physical "collocation"--that is, to permit a competitor to locate and install its equipment on the incumbent's premises--which makes feasible interconnection and access to UNEs.[44]

2. The **European Commission** adopted the essential facilities doctrine in the 1990s under Art. 82 EC Treaty that prohibits the abuse of a dominant market position. The Commission introduced this doctrine in a series of decisions involving transportation infrastructure. The Commission first used the full term "essential facility" in 1992 in an interim measures decision in B&I Line plc v. Sealink Harbours Ltd. and Sealink Stena Ltd. The Commission found that Sealink held a dominant position in a market for providing port services between the UK and Ireland by controlling the only suitable port on the UK side, and abused it by granting preferential treatment to its own ferries versus those of its competitors, therefore violating Art. 86 (now Art. 82) EC. In its Access Notice from 1998, the Commission set out a full-fledged essential facilities doctrine that markedly resembled that expressed by some US circuit courts.[45] **The European Court of Justice (ECJ)** also takes converging views with US circuit courts in demanding that the facility in question must be virtually indispensable to competition in another relevant market [46]It is therefore correct to conclude that "there is and

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[41] See 47 U. S. C. §§ 251(b)(2), (4)

[42] Verizon Communications Inc. v. FCC, 535 U. S. (2002), at 495-496.

[43] See supra note 47.

[44] 47 U. S. C. § 251(c) (6).

[45] 1998 Access Notice, para. 91: "In order to determine whether access should be ordered under the competition rules, account will be taken of a breach by the dominant company of the following elements, taken cumulatively: (a) access to the facility in question is generally essential in order for companies to compete on that related market; (b) there is sufficient capacity available to provide access; (c) the facility owner fails to satisfy demand in an existing service or product market, blocks the emergence of a potential new service or product, or impedes competition on an existing or potential service or product market;(d) the company seeking access is prepared to pay the reasonable and non-discriminatory price and will otherwise in all respects accept non-discriminatory terms and conditions; there is no objective justification for refusing to provide access."

[46] See the 1998 Bronner Case, C-7/97, decided on 26 November 1998:" not only that the refusal of the service comprised in home delivery be likely to eliminate all competition in the daily newspaper market on the part of the person requesting the service and that such refusal be incapable of being objectively justified, but also that the service in itself be indispensable to carrying on that person's business, inasmuch as there is no actual or potential substitute in existence for that home-delivery scheme."(para. 41);Gregory McCurdy, Intellectual

there should be such thing as an EC essential facilities doctrine, albeit having a restricted scope of application."[47]

Despite the aforementioned resemblance, the ECJ in addition to elimination of competition constantly requires that the refusal to license prevents the emergence of a *new product*[48]. The 2004 IMS Health GmbH case[49] reiterates this[50]: In order for the refusal to be abusive, three cumulative conditions must be satisfied, namely that that refusal is preventing the emergence of a *new product* for which there is a potential consumer demand, that it is *unjustified* and that it is such as to exclude any competition on a *secondary market* (para. 38).

According to one commentator, the additional requirement by the ECJ that the emergence of a new product be prevented seems unjustified since competition by substitution of a new product (dynamic efficiency) is excluded by the refusal, then at least competition by imitation shall be allowed to achieve allocative efficiency.[51] In addition, in contrast to Trinko that is limited to cases terminating existent contractual relationships, the ECJ would also intervene in absolute refusal-to-deal situations where no prior contractual relationship existed.[52]

3. **Germany** first introduced the essential facility doctrine into individual laws on network industries (railroads, telecommunications, electricity, airport and post) to facilitate access,[53] then in 1999 into the German Law against Constraints of Competition (GWB). However, the newly added Sec. 19(4) No. 4 GWB, which serves as one of the examples of abuse of dominant position, does not take on board the ECJ's additional requirement that the emergence of a new product be prevented by a refusal to allow access to the essential facilities: "In particular, it is an abuse of dominance when the dominant undertaking for goods or services refuses another undertaking access to its own network or infrastructure facilities at reasonable prices, without the shared use of which it is de facto or de jure impossible for the latter to compete against the dominant undertaking in the upstream or downstream market."[54]

Property and Competition: Does the Essential Facilities Doctrine Shed Any New Light? E.I.P.R., 2003, 479.

47 Vassillis Hatzopoulos, "Refusal to Deal- The EC Essential Facilities Doctrine," in : Amato/Ehlermann（eds.）, "EC Competition Law, A Critical Assessment" 375（2007）.

48 Joined cases C-241/91 P and C-242/91 P, 1995 ECR I-743, decided on April 6, 1995. CELEX LEXIS 9006.

49 C-418/01, decided on 29 April 2004, Celex No. 62001J0418.

50 For the distinction between Magill and IMS Health see Burton Ong, Anti-competitive Refusals to Grant Copyright Licenses: Reflections on the IMS Saga, 2004 E. I. P. R. 506-507.

51 Drexl, ibid., at 806.

52 Drexl, ibid., at 790-791.

53 Möschel, in Immenga/Mestmäcker, GWB (3. Aufl., 2001), § 19 Rdnr. 182.

54 There are divergent views among German academics with regard to the question in which market there must

The German Supreme Court (BGH) had a chance to interpret Sec.19 (4) N. 4 GWB and its relationship with the compulsory license regime of the Patent Act in the "Spundfass" decision of 13 July 2004. The case involved an industry standard developed jointly by four leading companies in the chemical industry in Germany, which are all members of the "Association of Chemical Industry (VCI)," namely the plaintiff, K, S and vL. The technical method based on the patent held by plaintiff was adopted in the "VCI framework conditions for the new L-ring-bottle, 31.7.1990" endorsed by major players such as BASF, Bayer, Hoechst and Hüls. The plaintiff granted licenses to K, S, vL free of charge, and to other bottle manufacturers in return for a royalty. However, on 17 July 1996 the plaintiff declined to license its patent to the defendant, which was a subsidiary of an Italian bottle maker, and sued the defendant for patent infringement. On 9 February 1999 the plantiff obtained an injunction from the district court Düsseldorf which prohibited the sale of the bottles in question. The defendant justified its use of the patent by claiming that the plaintiff was obliged to grant a free license. The district court ruled in the plaintiff's favour. The defendant appealed the decision and filed a counterclaim for the free use of the patent in Germany. Both the appeal and the counter claim were rejected by the Appellate Court. But the BGH overruled the decision and remanded the case back to the Appellate Court.[55]

The BGH first established that the licensing of the patent at issue is for itself a relevant market and separated from the downstream relevant product (bottle) market.[56] BGH then determined that the use of the patented method cannot to be replaced by another technical arrangement for the chemical industry, because the "VCI framework conditions for the new L-ring-bottle" can only be met by bottles that follow the patented teaching, and companies in the German chemical industry for the most part will buy only bottles complying with the VCI framework conditions.[57] The BGH further reasoned that a patent also protects the potential to expand the formal exclusive position in the market to a commercial monopoly. So in principle, there is a significant leeway for the justification of unequal treatment of undertakings seeking to license the patent. However, when on top of the market dominance by the patent additional circumstances would make unequal treatment a threat to the freedom of competition protected by GWB, stricter requirements

be dominance, the infrastructure facilities market or the derived market. Möschel is of the opinion that the dominant position must be in the derived market (ibid., at Sec. 19, marginal note 192), whereas Bechtold holds that dominance can be in either the infrastructure facilities market or the derived market (Bechtold , "Kartellgesetz", marginal note 81, (2. Aufl.,1999)).

[55] BGH GRUR 2004, 966.

[56] BGH GRUR 2004, 967.

[57] BGH GRUR 2004, 968.

must apply. In the present case, the market dominance was not just based on the patent, but also on the fact that the access to the downstream product market required compliance with the patented method. As the market-dominating enterprise arbitrarily denied access to the downstream market, it fell foul of competition rules. By holding that intellectual property rights incorporated in standards can be "infrastructure facilities", the BGH went in fact beyond the original intent of Sec. 19 (4) No. 4 GWB, which excludes the intellectual property rights from being made subject to forced access. The BGH also clarified that because the two legal institutions serve different purposes and have different pre-conditions, compulsory access due to the abuse of dominant position or unjust discrimination may be ordered notwithstanding the exclusive jurisdiction of the Federal Patent Court to grant compulsory licenses under Sec. 24 Patent Act.

4. During the **Uruguay Round** negotiations, governments perceived the dual role of telecommunications services as a distinct sector of economic activity and as an essential communication means for other economic activities such as banking, insurance, wholesale and retail trade and business services. Therefore, the General Agreement on Trade in Services (**GATS**) of the **WTO** puts trade in telecommunications within its ambit. An Annex on Telecommunications (AT) was adopted which provides foreign suppliers with access to and use of public telecommunications networks and services on reasonable and non-discriminatory terms [58] : "Each Member shall ensure that any service supplier of any other Member is accorded access to and use of public telecommunications transport networks and services on reasonable and non-discriminatory terms and conditions, for the supply of a service included in its Schedule" (Para. 5(a), AT). However, the term "access and use" does not cover interconnection, ie the physical and logical linking of two competing telecommunications networks. [59] During the post–Uruguay Round negotiations in basic telecommunications, the negotiation group agreed on a set of definitions and principles on the regulatory framework for the basic telecommunications services that were summarized on 24 April 1996, as the Reference Paper (RP). The RP is a unique document in the history of the WTO in the sense that it is a binding document derived from Art. XVIII GATS,[60] rather than an amendment to GATS or AT which would require ratification by two thirds of WTO

[58] Bobjoseph Mathew, "The WTO Agreements on Telecommunications" 52（2003）
[59] Mathew, ibid., at 103.
[60] Article XVIII GATS reads: "Members may negotiate measures affecting trade in services, including those regarding qualifications, standards or licensing matters."

Members. At least 68 WTO Members have subscribed to this additional commitment.[61] The RP defines essential facilities as facilities of a public telecommunications transport network or service that, (a) are exclusively or predominantly provided by a single or limited number of suppliers; and (b) cannot feasibly be economically or technically substituted in order to provide a service. A supplier which has the ability to materially affect the terms of participation in the relevant market for basic telecommunications services as a result of control over essential facilities is characterized as a major supplier. Major suppliers are subject to the obligation of interconnecting with other suppliers according to para. 2 RP

Para 2.1 first delineates the general coverage of interconnection. Para. 2.2 then articulates the ways in which interconnection with major suppliers at any technically feasible point is to be ensured: (a) under non-discriminatory terms, conditions (including technical standards and specifications) and rates and of a quality no less favourable than that provided for its own services or for similar services of non-affiliated service suppliers or for its subsidiaries or other affiliates; (b) in a timely fashion, on terms, conditions (including technical standards and specifications) and cost-oriented rates that are transparent, reasonable, having regard to economic feasibility, and sufficiently unbundled so that the supplier need not pay for network components or facilities that it does not require for the service to be provided; and (c) upon request, at points in addition to the network termination points offered to the majority of users, subject to charges that reflect the cost of construction of necessary additional facilities.

5. The majority of academics of competition law in **Taiwan** endorse the essential facilities doctrine and accept that compulsory licenses of IP can be derived from such doctrine.[62] The TFTC adopted the essential facilities doctrine in its guidelines, “How the Fair Trade Act Might Apply to Cross-Ownership and Joint Provision Among 4C (telecommunication, cable TV, computer network and E-commerce) Enterprises (4C Guidelines)” in 2002.[63] As a matter of fact, prior to that, the comprehensively revised Telecommunications Act 1996 prescribes an interconnection duty on all Type 1 operators (i.e. facility-based operators). Clearly, the interconnection obligation has its origin in the essential facilities doctrine. Its purpose is to eliminate the network effect and competitive advantage that holders of major networks enjoy over competitors to the extent that competition cannot function by itself. Under the

[61] Mathew, ibid. at 126.
[62] Su-Hua Lee, “Patent Right and Competition Issues: Access to Essential Patents with Regard to Technical Standards” (written in Mandarin), 16 Fair Trade Quarterly 2 (April 2008), at 105.
[63] For more details and discussion of 4C Guidelines see Kung-Chung Liu, ibid., at 758-759.

interconnection obligation, the dominant network operator must provide its networks to its competitors, and vice versa. After two more revisions that took place in 1999 and 2002, the obligation of interconnection was extended to cover all Type 1 and Type 2 operators (i.e. service-based operators). In case of unsuccessful negotiation, interconnection could be determined by the competent authority, the National Communications Commission (NCC).[64]

In 1999, the Telecommunications Act introduced a limited essential facilities doctrine that only requires Type 1 operators controlling fixed-networks "bottleneck facilities" to share them with other Type 1 operators for a cost-based charge[65] "in order to save social resources,"[66] rather than to maintain competition. The items of bottleneck facilities are to be designated and announced by the competent authority. The former competent authority, the Ministry of Transportation and Communications (MOTC) could only have determined that bridges, tunnels, conduits and telecommunication chambers within condominiums and horizontal and vertical telecom wire lines within buildings were bottleneck facilities of fixed networks. However, what is really vital to the competition of fixed networks are local lopes (last mile) connecting main distribution frames and customer premise equipments. At long last, at the end of 2006 the NCC designated local loops consisting of twisted copper wires as bottleneck facilities, which are exclusively owned by the dominant incumbent fixed network operator and indispensable for new fixed network operators to reach the end-users. Unfortunately, the designation has not thus far brought a breakthrough to the bottleneck situation, as new fixed network operators are still suffering from a lack of access to customers, no business, and no market share. The reason for it is twofold. First, the incumbent demands fees from newcomers which are so high that the latter could not possibly compete with the former. Second, the NCC sees itself not authorized by the Telecommunications Act to intervene and fix the fees.

[64] Relevant provisions of Art. 16 Taiwanese Telecommunications Act: (1) Request for network interconnection between or among Type I telecommunications enterprises shall not be rejected, unless the law specifies otherwise. (2) The arrangement of network interconnection mentioned in the preceding paragraph shall follow the principles of transparency, reasonableness, non-discrimination, network unbundling and cost-based pricing. The DGT (now NCC) shall designate the telecommunications enterprises to which the said principles shall apply. (7) Type 1 telecommunications enterprises shall not reject the request for network interconnection by Type 2 telecommunication enterprises without due cause, unless the law specifies otherwise. The preceding paragraphs 3 and 6 shall apply, mutatis mutandis, to the agreement of network interconnection.

[65] Art. 31 of the Taiwanese Telecommunications Act: (1) When a Type 1 telecommunications enterprise engages in the construction of infrastructure for the lines and pipes of its fixed networks, it may request to share the facilities at the bottleneck of telecommunications networks with the owners of such facilities for a charge. (2) With respect to the request of sharing the infrastructure described in the preceding paragraph, the party being so requested shall not reject such request without due cause.

[66] So reads the legislative reason for Art. 31 of the Taiwanese Telecommunications Act, available at: www.ly.gov.tw.

VI. Using the Essential Facilities Doctrine to Rationalise Compulsory Licensing

1. It is paramount for the WTO to revise the TRIPs Agreement and put forward **substantive grounds for granting compulsory licenses** in order to avoid a repetition of past frictions between Members as illustrated by the Taiwanese CD-R case. In doing so, public policy objectives must be taken into consideration to make compulsory patent licensing instrumental to the balancing of private and public interests. Preamble (e) TRIPs Agreement already recognizes, "the underlying public policy objectives of national systems for the protection of intellectual property, including developmental and technological objectives", and Art.7 further recognises economic welfare as a public policy objective: "The protection and enforcement of intellectual property rights should contribute to the promotion of technological innovation and to the transfer and dissemination of technology, to the mutual advantage of producers and users of technological knowledge and in a manner conducive to social and economic welfare, and to a balance of rights and obligations."

This paper would strongly advocate the maintenance of competition to be recognised as one of the public policy objectives worthy of legal protection. In fact, the Draft TRIPs Agreement of 23 July 1990 allowed the granting of a compulsory license in order "to remedy an adjudicated violation of competition laws." However, for competition to work its magic it needs a helping hand from competition law to overcome the dependency of undertakings on network effects and industry standards in a globalised world market. In addition, competition law is especially needed in monopolistic markets because market power is concentrated in the hands of a few and can easily be abused and extended into related markets. As a result, competition in the downstream and upstream markets will be severely affected, even eliminated. It therefore makes perfect sense to weave what has been developed to prevent the abuse of monopoly power, i.e. the essential facilities doctrine, into the compulsory patent licensing mechanism: An obligation to deal or license is the second best solution to guarantee at least allocative efficiency in market situations where IP protection does not reach its goal of promoting dynamic efficiency due to the lock-in effect.[67]

2. This paper proposes the following tentative **definition of essential facilit**ies to be subsequently woven into TRIPs' compulsory patent licensing regime, taking account of the intangible nature of a patent: If a dominant undertaking owning a tangible (network,

[67] Drexl, ibid., at 805.

infrastructure etc.) or intangible (IP for example) essential facilities without the use of which it is impossible for legal (e.g. de jure standards) or factual reasons (competitor's inability practically or reasonably to duplicate the essential facilities due to de facto standards, network effects etc.) for others to compete against the dominant undertaking in the upstream or downstream market, refuses without justifiable reasons (such as the practical infeasibility to provide access) to grant access to or license such facilities on reasonable conditions after a reasonable period of time for negotiation, which would lead to the exclusion of competition in the adjacent down- or upstream market, the dominant undertaking shall be obliged to provide access or license upon the payment of adequate remuneration. The additional requirement by the ECJ that the emergence of a new product shall be prevented by such refusal is unjustified and unnecessary.

3. When **applying this definition to the CD-R cases**, the following deserves mentioning: Philips, the Sony Corporation and Taiyo Yuden by establishing the standards for CD-Rs (a de facto standard) and pooling their patents for CD-Rs hold a worldwide absolute monopoly power in the licensing (technology) market for the CD-R patents. Philips et al.all engage in the production of CD-Rs either via OEM, brand licensing or its own making. The patents are indispensable for other manufacturers of CD-Rs, without the use of which they cannot compete against Philips et al. in the downstream product market, namely the market of CD-Rs (for the distinction between technology and goods markets see above). If Philips et al. refuse to license or to renew licenses (this is the case in Taiwan) to other manufacturers of CD-Rs after a reasonable period of time for negotiation to use the patents surrounding CD-R on reasonable conditions, a compulsory license is legitimate, in order to avoid the expansion of monopoly power of Philips et al. into the adjacent downstream CD-R product market, which would seriously constrain or even eliminate competition thereof.

4. National regimes differ with regard to which **agency shall have the authority to grant compulsory patent licenses** in order to address competition concerns. As patent offices and (both general and special, e.g. antitrust or patent) courts are less well equipped to determine the essentiality of facilities in question for competition in the adjacent down- or upstream market, it would be preferable to combine the expertise and strength of both IP and competition authorities into one decision mechanism, be it with the former in charge, such as the UK, or with the latter in charge of granting a compulsory license.

5. The above suggests a standard scenario for the grant of compulsory licenses rather than a case-by-case system under TRIPS Agreement, and as a result, non–applicants and non-complainants should be allowed to resort automatically to the compulsory licenses granted to the applicants or complainants. Non–applicants, who have struck a voluntary licensing agreement with patentees before the grant of compulsory licenses should be allowed to substitute the voluntary licensing agreement with compulsory licensing. The TRIPs Agreement should therefore do without the case-by-case limitation insofar as justified and reasoned.

VII. Conclusion

The patent system is meant to strike a balance between public and private interests. It is therefore imperative to add public policy considerations into the compulsory patent licensing regime of the TRIPs Agreement. A compulsory patent licensing regime based on the well-defined essential facilities doctrine that is enforced jointly by the competition and IP authorities can prevent monopolies from extending their market dominance to adjacent markets by refusing others the use of their patents on reasonable terms, and thereby maintain market competition.