FACULTY OF LAW
University of Lund

Helena Höök

Compulsory licensing – at what cost?

An international study of what constitutes RAND terms.

Abstract

In awarding compulsory licenses to remedy anti competitive behaviour, the EC courts have indicated that the compensation for the license should be awarded on, "reasonable and non-discriminatory" terms, RAND. This thesis explores the concept further, giving an account of the community aquí in the EC today, as well as making comparisons to RAND licensing in the U.S. Parallels are also drawn to FRAND licensing in a standard setting context and is also complimented by economic analysis to arrive at possible solutions for calculating RAND terms.

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Supervisor: Hans Henrik Lidgard

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Summary

Compulsory licensing is used to prevent the owner of an intellectual property right from refusing to exploit that right in a country or from being the sole provider of a product by forcing him to permit competition from other producers', subject only to their payment of a reasonable royalty or licence fee. When a compulsory license is used to remedy an abuse of competition law, issues of conflict between the rationales behind the intellectual property regulations and the rationales behind competition law arise. Due to a wide legal framework in the shape of international conventions, the European Community courts have had to fend for themselves when finding a good balance. EC legislation is still missing, but possibly forthwith coming.

One of the balancing tools is the fee that has to be paid by the beneficiary of a compulsory license. The case law sets, after some reluctance, the standard "reasonable and non-discriminatory" terms, RAND. The criteria might seem unexceptionable, but when one comes to turn them into actual numbers, one is left with many critical questions unanswered. Moreover, the factors that are missing reveal important gaps in the economic analysis that lies behind the decision to intervene in these markets.

The only European case expanding on the RAND concept is the Microsoft case. The Microsoft Pricing Principles focus, in the absence of historical price, on reflecting the market valuation of comparable technologies, and through inserting the "no strategic valuation" criterion alongside the usual language of reasonableness and non-discrimination, the Commission has made some steps towards specifying the access-pricing regime more fully. From looking into the motives and means of royalty calculation, license obligations in standard setting, economic considerations as well as IP valuation theory, the result is that in the EC as well as in the U.S, the Courts have tried to resemble a market based royalty. This is done by trying to restore the "but for" world or resembling what is an "arms-length" price.

Due to the fact, that a royalty rate is essentially arbitrary in a freely determined royalty though, it is difficult to find a sensible basis for objective comparison. This fuels the desire to cling to the market norms, going rates and benchmarks and leads us to one of the major problems in trying to establish a price for a transfer, that in most cases the goods or services under consideration are not available in the same quantity and quality in unconnected transactions. Therefore, the identifying of an arm's length price necessarily contains a substantial element of subjective judgement, and therefore so does the RAND terms.

Sammanfattning

Tvångslicensiering används för att förhindra innehavaren av en immaterialrätt, från att vägra använda den eller från att vara den enda användaren, genom att tvinga ägaren att tillåta konkurrenter att använda den. Detta sker i utbyte mot rimlig ersättning. När en tvångslicens används för att åtgärda konkurrensrättsöverträdelser uppstår konflikter mellan avvägningarna bakom de immaterialrättsliga reglerna och de konkurrensrättsliga avvägningarna. De vida ramar som internationella konventioner sätter, i kombination med ännu icke-existerande lagstiftning på EG nivå, har lämnat balanserandet av dessa områden inom EU till domstolarna.

En del av balansakten är den ersättning som ska utgå för användandet av den tvångslicensierade immaterialrätten. Rättspraxis har, efter viss motsträvighet, etablerat att ersättningen skall vara *”reasonable and non-discriminatory*” (rimlig och icke-diskriminerande), förkortat RAND. Dessa kriterier är dock vid den faktiska ersättningsberäkningen, vaga och föga hjälpsamma. Viktiga faktorer som återspeglar den ekonomiska analys som underbygger beslutet att göra ingrepp i dessa marknader saknas.

Microsoft är det enda fall från gemenskapsdomstolarna som utvecklar begreppet RAND. ”The Pricing Principles” om anges i Kommissionens beslut fokuserar, i avsaknad av historiskt pris, på att royaltyn ska reflektera marknadsvärdet av jämförbara teknologier. Genom att infoga kriteriet att Microsoft inte får utnyttja sin ledande ställning i värderingen av sina gränssnitt (”no strategic valuation”) utöver kravet på rimlighet och icke-diskriminering, har kommissionen tagit ett steg mot att specificera ersättningen för tillgång till en immaterialrätt vidare, även om det lämnar en del att önska.

Genom en undersökning av motiven och sätten att beräkna ersättning i rättspraxis, licensieringsskyldigheten i standardiserings sammanhang, ekonomisk doktrin och olika metoder för värdering av immaterialrätter är resultatet att, i såväl EU som USA, domstolar och myndigheter har försökt efterlikna en marknadsbaserad royalty genom att återskapa en situation så som den var innan konkurrensstörningen (the ”but for” world), eller vad som är ett resultat av frivillig förhandling mellan självständiga parter (”arms-length” price).

Eftersom ersättningsnivåerna i grunden är godtyckliga i fritt förhandlade royalty situationer, är det svårt att hitta en lämplig grund för objektiv jämförelse. Detta faktum ökar viljan att se till marknadsnormer och andra standarder, vilket leder oss till ett av de största problemen med att fastställa en royalty för en licens, att i de flesta fall varan eller tjänsten som berörs inte finns tillgänglig i samma kvantitet eller kvalitet i skilda transaktioner. På grund av detta är identifierandet av ett pris framförhandlat av frivilliga och självständiga parter nödvändigtvis till stor del baserat på subjektiva bedömningar, och därmed är även RAND det.

Abbreviations

CFI	Court of First Instance
DRAM	Dynamic Random Access Memory
ECJ	European Court of Justice
EC	European Community
EC Treaty	Treaty Establishing the European Community
ECPR	The Efficient Component Pricing Rule
ETSI	European Telecommunications Standards institute
FRAND	fair, reasonable and non-discriminatory
FTC	Federal Trade Commission
IPR	intellectual property right
JEDEC	Joint Electron Device Engineering Council
OS	operating system
PC	personal computer
R&D	research and development
RAND	reasonable and non-discriminatory
SSO	standard-setting organisation
UMTS	Universal Mobile Telecommunications System
US	United States of America
WCDMA	Wideband Code Division Multiple Access

1 Introduction

The intersection of intellectual property law and competition law is a much-debated subject. The development of the information society together with the globalization of trade has made intellectual property a key production factor comparable to other factors such as labour, raw materials and capital, and such assets need protecting to facilitate trade. At the same time, in the EC as well as in the world at large, competition law has taken a central role in the shaping of a fair and effective business environment. Even though the same harmonisation as for intellectual property has not taken place, at least not yet,[1] competition law is well harmonised within the EC and is an important tool in the establishing a well functioning internal market.[2]

Intellectual property rights regimes create monopolies to spur innovation, while the competition laws want to eliminate monopolies.[3] To a certain extent, these areas of law are, said to be conflicting. The main difference however, is not in the aim but in the way of serving the same purpose; maintaining and encouraging innovation and consumer welfare. The balancing of the two areas of law has been up for debate for a long time and the two systems seem to work reasonably well side by side in practise. Today competition and intellectual property laws are, more often viewed as complementary. Problems however arise when intellectual property rights are, used to circumvent the competition rules. One means to remedy such abuse is through compulsory licensing.

1.1 Background

Compulsory licensing consists of an obligation to issue one or more licenses to exploit an intellectual property right. Compulsory licensing can be found internationally in the Paris Convention and in the TRIPS agreement, in the EC in the non-ratified Community patent Convention (CPC)[4] and in the EC regulation on compulsory licensing of patents relating to the manufacture of pharmaceutical products for export to countries with public health problems[5]. Only few countries do not have a system of compulsory licensing, indicating an almost universal recognition of it as an essential element of a modern intellectual property system.

Compulsory licensing has however been criticised; besides for restricting the fundamental freedom of contract, also for economic reasons.

[1] The recent Doha meeting of the World Trade Organization (WTO) has called for the next round of world trade talks to take steps toward harmonization, including harmonization of certain core substantive standards.
[2] Craig, De Burca, *EU law text, cases and materials,* p. 951
[3] David A. Balto, Andrew M. Wolman *Intellectual Property And Antitrust: General Principles,* IDEA: The Journal of Law and Technology
[4] Article 45-47.
[5] Regulation (Ec) No 816/2006 Of The European Parliament And Of The Council Of 17 May 2006

The remedy is accused of limiting, the incentive to innovate. In technology based business and pharmaceuticals especially, substantial investments are needed to put into research and development and it is almost universally agreed that successful innovators must receive a reward for their risky and costly investments in research. The Kok Report, prepared in response to an initiative of the European Council, recognises that "companies will only invest in innovation and R&D if they have the certainty that they will be able to reap the rewards of that investment."[6] Despite this, there are no explicit rules on compulsory licensing in the EC treaty. The Court instead has been leading the development. The case law however is scarce, and refers to *exceptional circumstances,* which in turn are not clearly defined.

To keep the balance between consumer welfare and the incentive to innovate, the European Courts have established that when a compulsory license is issued, royalty should be paid at a level that is "reasonable and non-discriminatory", RAND. What that specifically entails is not clear. Recently there has however been some development in the area, in the Microsoft case.

1.2 Purpose

The purpose of this thesis is to investigate what constitutes RAND terms in compulsory licensing of intellectual property. Central to the thesis will be the concept of *reasonableness*, the reasonableness of compulsory licensing as such in different situations, with special emphasis on the use of compulsory licensing as a remedy in competition law cases. As the title *Compulsory licensing - at what cost?* implies, it is the facts to be considered in determining the specific remuneration that should be paid for a compulsory licence, as well as the costs induced in the sense of a possible lack of incentive to innovate that is up for analysis and discussion. The author does not claim to arrive at a certain royalty percentage or provide *the* solution, but to map out the current community aquí and highlight some major concerns and search for possible guidance as to what constitutes RAND terms.

1.3 Method and material

The starting point of the investigation will consist in providing an overview of the different situations in which compulsory licensing is applied. For this purpose, I will use a traditional legal method, going through doctrine and case law on the subject to establish the Community aquí and set up a framework through the international conventions. For an outlook into the possible future and aims of the European Community, Commission guidelines and documents, as well as information emanating from the competition authorities, will also be studied.

An international outlook will also serve as a comparative analysis, looking across the Atlantic for the American perspective to see

6 *Facing the Challenge. The Lisbon strategy for growth and employment.* Report from the High Level Group chaired by Wim Kok, former Dutch Prime Minister, November 2004.

whether it differs significantly from the European approach, and whether parallels can be drawn to predict future development in the area.

For a more critical perspective and analysis, I have found inspiration in articles on the subject. Considering the freshness and speed of the developments in the area of technology and limited material on this subject, I have found it both necessary and interesting to refer to as updated material as possible.

Further, to assess the appropriateness of compulsory licensing as a remedy I find it necessary to look at economic doctrine to understand the implications of the legal framework and possible considerations that underlay the policies. Therefore, a law and economics method will be used to, test the legal findings and compliment the descriptive and comparative analysis.

1.4 Delimitations

The focus will be on the implication of compulsory licensing from a competition law perspective and concerning technology transfer in companies with a dominant position on the international arena. As far as intellectual property is concerned patents and to a certain extent copyrights will have a predominate role. The situation in the EC will be the starting point, but international debate, cases and doctrine will also be dealt with, as far as it is considered relevant to compare to the EC situation. Despite the comparative perspective, national rules on intellectual property and compulsory licensing will be held to a minimum, expanded on only, where necessary for an overall understanding of the problem at hand. The law perspective will be predominant and although very much interesting and relevant, the field of economics will be limited to basic observations.

1.5 Outlook

Starting in the second chapter, an economic background to compulsory licensing will be presented, as well as the legal framework governing compulsory licensing in the EC. In chapter three, the current application in the EC is expanded on through investigation of case law. The forth chapter focuses on the very substance of this paper, the RAND terms concept. A further analysis of case law and relationship between RAND and its sibling FRAND is analysed from an EC perspective. The US perspective on RAND, based essentially on case law, serves as a comparative analysis in chapter five. Possible solutions are discussed, based on common valuation methods and factoring in conclusions made in the previous chapters in chapter six. The paper is concluded by final remarks in chapter seven.

2 Compulsory licensing as a competition law remedy

2.1 An economic introduction

Compulsory licensing is used in different situations, amongst others to increase competition for the product, resulting in lower prices for the consumer. I is also used, to increase the availability of the product in the country, to increase employment and tax base of the country by requiring working of the patent in the country, to prevent the blocking of improvement patents, to ensure access for drugs or compel technology transfer to developing countries and to serve as an incentive for licensing on a fair and equitable basis.[7] This thesis will focus on compulsory licensing used to remedy competition law abuses and I would like to start by giving some economic background to the remedy and the balancing of interests that it entails.

2.1.1 Rationale behind competition law

The economic rationale behind a free market economy is that freely operating competitive markets will result in the most efficient allocation of a nation's scarce resources and will bring consumers the widest variety of choices and the lowest possible prices. Competition laws are intended to ensure that markets remain competitive.

In many nations, price and quantity of goods are regulated through the invisible hand of the market. In certain circumstances, these market economies may implement government action to correct perceived inequities. One such situation is that of competition law violations. In such case, the nation is justified in designing a remedy that will best correct the anticompetitive practice. From an economics perspective, one of the main difficulties in determining the proper balance between competition law and intellectual property is the complexity of the market. The consequences of a competition law intervention, is hard to predict. While such interference may enhance competition in one way, it may also weaken it in another.[8]

When analysing whether the behaviour of a firm is abusive it is necessary to focus on the potential for the behaviour to harm competition and hence consumers, not to focus on harm to competitors. Harm to competitors is a natural result of fierce competition and so in general, should not be condemned.[9]

[7] Scott, *Compulsory Licensing Of Intellectual Property In International Transactions,* p. 1
[8] Gölstam, *Licensavtalet och konkurrensrätten,* p.103
[9] Bishop, Walker , *The Economics of EC Competition Law: Concepts, Application and Measurement,* p.252 note 6.128

A problem with letting competition law judges revisit the trade-offs already considered by intellectual property law is that, the optimal level of monopoly power ex post is none. The difference between ex ante approach and the ex post approach is that the judgement is based on the case in hindsight, while the ex ante approach deals with the situation at the entering into the deal.[10] Considering the fact that competition law only faces such ex post situations, it could be tempting to limit the use of IP based monopoly power so much that, adequate rewards for investment in IP could no longer be provided. On an individual case basis, this might seem reasonable, but looking at the bigger picture one must consider the larger impact of the combined effect of apparently harmless individual case decisions combine to wreck the delicate balance achieved by IP law.[11]

2.1.2 Rationale behind intellectual property

IP has numerous economic functions. The most common is that the system creates incentives for investment in research and development and creating new technologies.[12] There are far reaching differences between the approaches to intellectual property in the EC and the US. The US view IP in the same way as other property rights.[13] EC law on the other hand opens up for more far-reaching intervention in IP. This manifests itself in one way by the fact that agreements falling outside the *specific subject matter* of a patent may be prohibited. Whether the more far-reaching consideration of competition law on IP in the EC is beneficial to the economic efficiency of IP becomes interesting in this comparison.

The economic concept of efficiency relies on the notion of opportunity cost. The opportunity cost of using any resource is the return that this resource would have obtained in its best possible alternative use. Property rights are a necessary condition to achieve efficiency. The main difference between intellectual property and 'real' property is, that intellectual property has strong public good characteristics and tends to generate significant amounts of socially useful information.[14] Intellectual property is further a non-rival good. Its use by one agent does not reduce consumption by others.[15]

The effects of IP licences on the economy are diverse. They first induce a more effective diffusion of technology, making the invention available to more firms than if only exploited in-house. Further licensing makes for companies conducting activities for which they have specific advantage, separating inventing and performing research from

[10] Gölstam, *Licensavtalet och konkurrensrätten,* p. 408
[11] Anderman *,The Interface between intellectual property rights and competition policy,* p. 524
[12] Gölstam, *Licensavtalet och konkurrensrätten,* p. 428
[13] Ibid p. 427
[14] Anderman, *The Interface between intellectual property rights and competition policy,* p. 506
[15] Lévêque, *Leveraging and Essential Facilites: Interoperability Licensing in the EU Microsoft Case,* p. 80

manufacturing activities.[16] IP rights also give a right to exclude competitors, and in that sense, it has direct anti-competitive effects, raising the price of a product if it embodies a patented technology. This is a result of the market power conferred by the patent. This has to be seen with some time perspective though. If a patent is rewarded to a new technology, the effect of the patent is not to restrict competition on markets already existing, but to create a new market – possibly temporarily monopolized, but still arguably better than no market at all. Patents can also serve the creation of new companies by protecting them from competitive weapons given by incumbency in the shape of size, brand or sunk costs.[17]

2.1.3 Intellectual property and innovation

Innovation is necessary for a nation's economic growth. It is therefore important to scrutinize the relationship between intellectual property protection and innovation. However, while much has been said on the relationship between intellectual property protection and economic growth, very little is backed with tangible findings. Some support the conclusion that a strong patent system is necessary for investment and innovation and that compulsory licensing would only serve to weaken granted rights, thus diminishing foreign investment and local innovation and thereby decreasing opportunities for economic growth.[18] If compulsory licensing of a prospective innovation is anticipated, the patent race might turn into a waiting game. Instead of striving for being first to invent, firms wait for others to invest. In the extreme case, the difference in the payoffs obtained by the winner and the losers in the patent race may be so small that investment and innovation cease. As pointed out by Philip Lowe and Luc Peeperkorn, senior officials at the Directorate General for Competition of the European Commission, "…[e]arly copying of an innovation and free riding on an innovator's efforts undermine the incentive to innovate."

The Theory of Monopolies Leading to Innovation was first breached by *Joseph Schumpeter* in 1942.[19] He saw monopolists and quasi-monopolists as better able to invest more resources in research and development due to their size, and having a larger willingness to do so because they could later recoup the entire profits stemming from their innovation without sharing them with free-riding competitors. Constant challenge from newer technologies would make sure that innovation and efficiency would be maintained.[20] Others have since, further expanded on Schumpeter's general theories on innovation and competition.[21] This line of argument, is based on broad patent rights effectively conferring a monopoly

[16] Guellec, Van Pottelsberghe de la Potterie, *The Economics of the European Patent System IP Policy for Innovation and Competition*, p. 93
[17] Ibid. p. 94
[18] Julian-Arnold, *International Compulsory Licensing: The Rationales And The Reality*, making reference to Robert Scherwood and Edwin Mansfield.
[19] See Joseph A. Schumpeter, *Capitalism, Socialism, and Democracy* 100-06 (3d ed., Harper & Row 1950).
[20] Ibid. p.81-106
[21] Amongst others Edmund Kitch. See Edmund W. Kitch, *The Nature and Function of the Patent System*, 20 J.L. & Econ. 265, 276 (1977).

on “prospects” (i.e. “upstream research far removed from commercial use”) are economically beneficial for two reasons. First, patent rights would provide development incentives by allowing the prospect owner to fully gain the benefits of such development. And second, the early and broad patent right would allow coordination of development efforts, which would the decrease duplicative investments in development.[22]

Arguing for the opposite has become more and more common amongst economists,[23] pointing out that a monopolist would have no incentive to create a new or superior product if the profits from that product would only eat into the profits on the monopolist's current products and that the risk of duplicative investment is overblown.[24] Duplicative investments can, through competing researchers arriving at different results at a quicker pace, multiple discoveries that help establish the validity of new research claims. There has not been a decisive resolution to the debate over whether or not competition promotes innovation. The empirical studies that have been done are equivocal.[25]

2.2 The legal framework

Even though intellectual property law is still to a large extent national system, it is very much an international concern and its application has a large impact on global trade and the development of less developed countries. Since long, there has been cooperation in this area on an international level, starting with the Paris Convention[26] followed by the TRIPS agreement[27] and numerous bilateral agreements between different countries.

2.2.1 The Paris Convention

The Paris Convention applies to industrial property in its broadest sense[28] and recognises the right of countries to impose compulsory provisions with certain limitations.[29] Article 5 contains provisions allowing the Member states to legislate to prevent abuse of IP right, for example for failure to work. Forfeiture of a patent will not be provided for except, where the grant of compulsory licenses is not sufficient to prevent abuses and will not be instituted before the expiration of three years from the grant of the first

[22] Balto, Wolman, *Intellectual Property And Antitrust: General Principle*, p. 413
[23] Amongst others Kenneth Arrow and Rebecca Eisenberg.
[24] Balto, Wolman, *Intellectual Property And Antitrust: General Principles*, p. 414
[25] Ibid.
[26] The Paris Convention for the Protection of Industrial Property (1883) and amended lastly in Stockholm 1967.
[27] Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS), Annex 1C of the Marrakech Agreement establishing the World Trade Organisation
[28] Including patents on inventions, utility models, industrial designs, trademarks and trade names.
[29] The Berne Convention followed in the footsteps of the Paris Convention, creating the same kind of protection for literary and artistic works.

compulsory license. The patentee has a chance to justify his inaction by legitimate reasons. Article 5 also states that compulsory license shall be non-exclusive and shall not be transferable even in the form of the grant of a sub-license except with that part of the enterprise or goodwill which exploits such license. The Paris Convention is supplemented with additional obligations by The Agreement on Trade-Related Aspects of Intellectual Property Rights.[30]

2.2.2 The TRIPS Agreement

TRIPS was concluded as part of the negotiations leading up to WTO[31], and inserted in supplement 1 C of the Marrakesh-treaty.[32] The EC is through article 11.1 of the WTO agreement an original contracting party to the TRIPS agreement. TRIPS, is a mixed agreement, negotiated by the Commission on behalf of its Members, but executed by the Community as well as by each of its Member States separately. International treaties concluded by the Community with third states, or mixed agreements, are directly applicable and binding upon the Community and once approved by its organs the agreement becomes also binding upon individual EEC members as Community law.[33]

In the TRIPS agreement, the term compulsory licensing in not mentioned, but Article 31 refers to *'other use without the authorisation of the right holder'*.[34] The agreement sets out specific provisions that shall be followed if a compulsory license is issued, and the requirements of such licenses. The principal requirement for the issue of a compulsory license is that attempts to obtain a license under reasonable commercial terms must have failed over a reasonable period of time. A framework for the grounds on which compulsory licenses can be granted are set out, but specific situations in which compulsory licenses may be issued are set out in the legislation of each patent system and vary between systems.

TRIPS also provide that, the requirements for a compulsory license may be waived in certain situations, in particular cases of national emergency or extreme urgency or in cases of public non-commercial use.[35] The agreement also leaves room for a compulsory license to be used to remedy anti-competitive practices.

A compulsory license to remedy anti-competitive practices are a concrete application of principles contained in article 8(2) of the TRIPS Agreement; "Appropriate measures, provided that they are consistent with the provisions of this Agreement, may be needed to prevent the abuse of intellectual property rights by

[30] This 'Paris-plus' approach is established in article 2(1) of the agreement, which obliges all member countries to comply with articles 1 to 12 and article 19 of the Paris Convention, as revised in Stockholm 1967.
[31] World Trade Organisation, www.wto.org
[32] Strömholm, *Upphovsrätt och internationell privaträtt*, p.43 f
[33] Correa, Yusuf, *Intellectual Property and International Trade The TRIPS Agreement*, p.112-114
[34] TRIPS, Article 31
[35] TRIPS, Article 31

right holders or the resort to practices which unreasonably restrain trade or adversely affect the international transfer of technology."

Such licences are subject to special treatment with regard to the remuneration to be paid to the patent-holder.[36] This might be so, because it is regarded, as both a remedy and sanction against those that abuse the exercise of the conferred rights.[37] In such case, the royalty shall, according to TRIPS be "adequate in the circumstances of each case, taking into account the economic value of the authorization".[38]

When determining what *'adequate'* remuneration is, considerable room is left for interpretation at the national level, as it must be determined in each individual case, taking into account the circumstances of the licensee and of the market where it operates, as well as the purpose of the licence.[39]

2.2.3 European Community regulations

In lines with TRIPS there is since 2006 an EC regulation on compulsory licensing of patents relating to the manufacture of pharmaceutical products for export to countries with public health problems.[40] The regulation is part of wider action to address the issue of access to affordable medicines for developing countries. Therefore, the system should not be used by countries to pursue industrial or commercial policy objectives.[41] As of now there is no EC legislation on a general compulsory licensing of patents, but there is a proposal for legislation on the Community Patent[42] that contains provision for compulsory licensing. The regulation is based on the requirements of Article 5 of the Paris Convention and article 27(1) and article 31 of the TRIPS Agreement and allows the Commission to grant a compulsory licence of a Community patent when: (i) When licensing is needed to use a second patent involving an important technical advance of considerable economic significance in relation to the invention claimed in the first patent, subject to an obligation to cross-license; (ii) In times of crisis or extreme urgency or to remedy a practice determined by judicial or administrative process to be anticompetitive.[43]

Consequently, the community patent provides an explicit basis for the competition authorities to intervene in an extreme case where a

[36] TRIPs Article 31(k)

[37]Correa, Yusuf, *Intellectual Property and International Trade, The TRIPS agreement,* p. 211

[38] TRIPs Article 31 h

[39] Correa, Yusuf, *Intellectual Property and International Trade, The TRIPS agreement,* p. 215

[40] Regulation (EC) No 816/2006 Of The European Parliament And Of The Council Of 17 May 2006

[41] Preable to Reglulation 816/2006, para. 6.

[42] Proposal for a Council Regulation on the Community Patent, COM (200) 412 final, 1 August 2000 (OJ C 337 E/278, 28 November 2000)

[43] The compulsory license must be non-exclusive and may be cancelled when the circumstances which led to its granting cease to exist and are unlikely to recur. Member States may not grant compulsory licenses in respect of a community patent (article 22)

patent is used to block subsequent innovation by other inventors.[44]At the moment however, it is the usually the Commission which directs compulsory licensing by virtue of its powers under Art.7 of Council Regulation 1/2003, under which it can impose "behavioural" or "structural" remedies to terminate infringement of Arts 81 and 82 of the EC Treaty. [45] The Commission decision in turn, can be appealed to the Court of First Instance in Luxembourg.

2.3 Conclusions

The international conventions provide a framework within which a large freedom of discretion is awarded the member states concerning the circumstances and especially the remuneration for compulsory licensing. The economic doctrine also leaves room for discussion. A firm with unconstrained monopoly power is likely to be too lazy to innovate, while a firm with no prospect of attaining a degree of market power cannot expect to generate the funds to finance worthwhile investments in innovation. Somewhere between these unhelpful extremes lies the optimal degree of protection that balances the benefits of rivalry and competition against the need to provide incentives to innovate.

In the fast moving technical areas, patents play the role of strengthening the market power that is awarded the successful inventor, hence reinforcing the incentive to innovate ex ante, but possibly weakening the incentive to innovate for the winner, at least ex post. Using this reasoning, innovation tends to destroy competition, while competition spurs innovation.

So what is an appropriate basis for compulsory license to remedy anti competitive behaviour? The EC case law might bring some clarity.

[44] A further example of this concern is offered by the Biotechnology Directive in its new regime for compulsory licensing and cross-licensing of technological inventions.
[45] Council Regulation 1/2003 of December 16, 2002 on the Implementation of the Rules on Competition laid Down in Arts 81 and 82 of the Treaty, Art.7.

3 The EC case law

3.1 Balancing IP and competition

IP is a national system and one of the areas of law where the EC law and national laws collide, as far as competence is concerned. While Article 295[46] EC requires the Community to respect national systems of property ownership, Article 2 has a single market aim, establishing a common market. The free movement provisions of the EC Treaty however do not override the national intellectual property laws *per se*. Only if an undertaking uses its intellectual property right in a way, which has negative effects on the Community trade, can its exercise be stopped.

As a means of dealing with the competence issue between EC law and national law, the ECJ has developed a doctrine of differentiating between *existence* and *exercise* of IPRs.[47] Existence is a national concern, while exercise is a case for the Community. Use of an IPR in a manner, which ensures for the right holder the benefit of the *specific subject matter* of that right is, regarded as preserving the existence of that right. Use of an IPR in a manner, which goes beyond the specific subject matter of the right is regarded, as being an exercise of that right which must be analysed in light of the competition provisions of the Treaty.[48]

The competition rules of the EC is used to integrate the member states in the common market and give protection to*" small and middle seized"* undertakings. This is based on social reasons, as well as political forces that are pro entrepreneurship, a good corporate climate and that they are seen as contributing to economic growth and efficiency, in the sense of a sound market structure.[49] In other words, compulsory licensing of IP is only relevant when it comes to unilateral abuse of a dominant position. Such behaviour is sanctioned in, Article 82 of the EC Treaty.

In order for Article 82 to apply, the three criteria: dominance, abuse and effect on intra community trade must be fulfilled. Companies have a dominant position, when they "hold a position of economic strength that enables them to act independently in relation to competitors, customers and ultimately consumers".[50] Dominance can be held by a single undertaking, or jointly by several.

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[46] *"This Treaty shall in no way prejudice the rules in Member States governing the system of ownership"*

[47] Case 56 & 58/64 *Consten & Grundig v Commission [1966]E.C.R. 299.*

[48] Faull, Nikpay *The EC law of competition*, p. 1237

[49] Eklöf, *Upphovsrätt i konkurrens: särskilt om artikel 82 och tvångslicensiering*, p. 175

[50] *United Brands v Commission* [1978] ECR 207.

3.1.1 Monopoly v. dominance

As a rule, IP-based monopoly power should not differ from the treatment of monopoly power stemming from any other source.[51] It is however important to distinguish exclusive IPRs from a position of market power. The word *monopoly* is used in a different sense in intellectual property law and competition law.[52] A patent or copyright does not necessarily create economic monopolies or ban competition. They merely provide a right to exclude others from a particular innovation. The breadth of an IPR can vary. IP often competes with other IPRs or methods of accomplishing the same goal, and may or may not enjoy any monopoly in the competition law sense, or market power.[53]

Traditional market definition exercises focus on demand-side substitutability. This may lead to incorrect market definitions in dynamically competitive industries where competition does not come from readily available demand substitutes, but from new products, whose time of introduction is most often uncertain.[54] In a dynamic market, it can be normal with temporary "monopolies" that succeed each other in a rapid pace. Monopolists or oligopolists typically populate these industries. This is because competition is often a matter of "winner takes most." These high market shares are often not a good proxy for market power since in these industries the incumbents are, with very rare exceptions, under the permanent threat of entry and are only able to retain their position of leadership if they continue to innovate.[55]

In such industries, standards are also important. Complementary products have to be compatible and products are often made of many independent components. Overall, there are more competition *for* markets than *on* markets.[56] There is no sustainable market equilibrium with many small players co-existing peacefully in the market. Rather there are successive innovation races with winners and losers.[57] This thesis does however, due to lack of space, not allow any further development as to the correctness of market definition concerning dynamic industries and Article 82. As for now, I will stop at recognizing that monopoly does not necessarily equal dominance. Further, dominance is in itself not abusive, but Article 82 places a "special responsibility" on such companies.

[51] Anderman, *The interface between Intellectual Property Rights and Competition Policy*, p. 521
[52] Faull and Nikpay, *The EC law of competition*, p. 1235 note 10.05
[53] Elhauge, Geradin, *Competition law and Economic*, p. 192
[54] DG Comp's Discussion Paper on Article 82: Implications of the Proposed Framework and Antitrust Rules for Dynamically Competitive Industries, Christian Ahlborn, Vincenzo Denicolò, Damien Geradin, and A. Jorge Padilla, 31st of March 2006, p. 22
[55] Ibid. p. 26
[56] Guellec, Van Pottelsberghe de la Potterie, *The Economics of the European Patent System IP Policy for Innovation and Competition*, p. 95
[57] DG Comp's Discussion Paper on Article 82: Implications of the Proposed Framework and Antitrust Rules for Dynamically Competitive Industries, Christian Ahlborn, Vincenzo Denicolò, Damien Geradin, and A. Jorge Padilla, 31st of March 2006, p. 29

Article 82 of the EC Treaty
Any abuse by one or more undertakings of a dominant position within the common market or in a substantial part of it shall be prohibited as incompatible with the common market insofar as it may affect trade between Member States. Such abuse may in particular, consist in:
(a) directly or indirectly imposing unfair purchase or selling prices or other unfair trading conditions;
(b) limiting production, markets or technical development to the prejudice of consumers;
(c) applying dissimilar conditions to equivalent transactions with other trading parties, thereby placing them at a competitive disadvantage;
(d) making the conclusion of contracts subject to acceptance by the other parties of supplementary obligations which, by their nature or according to commercial usage, have no connection with the subject of such contracts.

In the IP context of competition law, two of the criteria in article 82 are of more relevance than the others, namely in cases concerning the refusal to grant licenses to any other undertaking and the granting or refusal to license on discriminatory or otherwise abusive terms.

The ECJ has made several decisions concerning refusal to deal in general.[58] The Court has also hinted that leverage-like behavior may be attacked under article 82.[59] The question is, if cases concerning intellectual property are treated, or should be treated, differently. In what circumstances can an IP right holder, under the competition rules, be forced to share his right with others?

3.1.2 Refusal to license intellectual property

Volvo Veng[60] is the leading case on compulsory licensing. It arose out of a suit alleging infringement of Volvo´s UK design rights for its front wing panels. Mr Veng claimed that Volvo, based on Article 82, was required to supply Veng panels or license him to make panels. The Court held that the freedom of the owner of an IPR to refuse to licence was the core of the right, and therefore a refusal to license in itself would not be contrary to article 82. In fact the right of the proprietor of a protected design to prevent third parties from manufacturing and selling or importing, without its consent, products incorporating the design constitutes *the very subject-matter* of his exclusive right. This has since, been settled case law. However, the court also indicated that an obligation to license could arise where Volvo had engaged in other conduct that constituted an abuse of its

[58] In 6 and 7/73 *Commercial Solvents v Commission [1974] ECR 223.*, an enterprise decided to end a long standing supply relationship concerning certain raw materials in order to start production of a derivative of its own. In C*c-311/84 Télémarketing (CBEM) v SA Compagnie luxembourgeoise de télédiffusion (CLT) and Information publicité Benelux (IPB)* the dominant position on the market for certain television-related services was used to reserve to the dominant firm a neighbouring but separate market without a technical or commercial justification.
[59] *C-18/88 Régie des télégraphes et des telephones not GB-Inno-BM SA, ECR 1991, s. I-5941, p.24 et seq.*
[60] Case 238/87 *Volvo v. Veng* [1988] ECR 6211

dominant position in respect of the products protected by the intellectual property rights.[61] *CICRA v. Renault,*[62] is a similar case, also concerning spear parts for cars, where the Court also said that the refusal to licence could be an abuse only if there was some additional element, such as the refusal to supply spare parts to independent repairers, or stopping sales of spare parts for models still in widespread use, or charging excessive prices for the spare parts.

3.1.2.1 Exceptional circumstances

The first case dealing with intellectual property, where a compulsory license actually was ordered, is *Magill.*[63] The case stirred up considerable debate on the appropriate balance between the protection of IPR and the need to promote competition. The case involved TV broadcasters that refused to license copyright-protected programme listings to an enterprise that wanted to produce the first weekly TV guide in Ireland.

The Court upheld the Commission decision, finding that exceptional circumstances existed where, there was consumer demand for the new product, where the TV companies had a de facto monopoly over the listings by virtue of their scheduling of TV programmes, where licence of the listings was an indispensable input for the comprehensive TV guide and where they were not themselves supplying the product to consumers.
The ECJ gave three criteria for the existence of an abuse pursuant to art 82 EC:

1, by the refusal to license his copyright, the copyright owner prevents the appearance of a new product, which constitutes an abuse according to art 82(b) EC.

2, there is no justification for such refusal

3, the copyright owners "reserved to themselves the secondary market of weekly television guides by excluding all competition on that market... since they denied access to the basic information which is the raw material indispensable for the compilation of such a guide".[64]

The court however leaves unclear what a "new product" means. It is also unclear, what the price that should be paid to the licensor in case of an imposed duty to deal.

In *IMS Health*[65] these criteria were elaborated on by the ECJ. IMS had developed a system for providing data on sales of pharmaceutical products to pharmaceutical companies, while preserving anonymity for specific outlets. The result was 'the 1860 brick structure'. When a rivalling firm started using the structure, IMS brought action against them.

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[61] Anderman, Kallaugher, *Technology transfer and the new EU competition rules, intellectual property licensing after modernisation*, p. 281 note 10.36
[62] Case 53/87, *CICRA v. Renault*, [1988] ECR 6039.
[63] Joined Cases C-241/91 P and C-242/91 P, *RTE and ITP v. Commission*, [1995] ECR I-743.
[64] Magill case, note 11, paras 54-56
[65] Case C-418/01, *IMS Health GmbH & Co. OHG v NDC Health GmbH & Co. KG[2004]*ECR I-5039

The Court repeated its statements in the Magill case; "that refusal to grant a licence, even if it is the act of an undertaking holding a dominant position, cannot in itself constitute abuse of a dominant position", but, on the other hand "exercise of an exclusive right by the owner may, *in exceptional circumstances*, involve abusive conduct".[66] The Court rejected the argument that the need to foster competition on the downstream market was by itself an essential circumstance that justified a mandatory licence. The court clarifies that, the three conditions in Magill have to be, construed as cumulative, and adds a further condition in the essential facilities context of the *Bronner*[67] judgement.

3.1.2.2 The Essential facilities doctrine

The essential facilities doctrine is an American invention and holds that dominant firms may incur antitrust liability if they do not provide access to their unique facilities, even to competitors, on a non-discriminatory basis, where sharing is feasible and the competitors cannot obtain or create the facility on their own.[68] The description quite nicely fits also the situation in cases of intellectual property, which are often *unique facilities.*

There is some indication of this doctrine in the Court's case law and Commission decisions. In the abovementioned Magill case it was established that Article 82 applies to a refusal to supply a product which is required by another party to produce a different product, even if the second product is in competition with the first and even if the producer of the first product enjoys an intellectual property right.

Since then, the development has taken a turn to a more limited view of the essential facilities doctrine. In *Ladbroke*[69] the CFI made it clear that an action for refusal to supply would only be plausible if the product or service being sought was essential for the exercise of the relevant activity.[70] This was also confirmed, in *ENS* [71], where the CFI held that a product or service could not be considered necessary or essential unless there was no real or potential substitute for it.[72]

The *Bronner* judgement further states, that even though the defendant was a dominant competitor to Bronner on the newspaper market, it was not bound as such to subsidize competing companies by letting them use their home delivery service. The conditions taken into consideration were:

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[66] ECJ, IMS Health case, note 16, paras. 34-35

[67] Case C-7/97, *Bronner v. Mediaprint* [1998] ECR I 7791; see also joined cases T-374/94 and others, *European Night Services*, [1998] ECR II 3141.

[68] Weber Waller, Frischmann, *The Essential Nature of Infrastructure or, The Infrastructural Nature of Essential Facilities*, p.7

[69] Case T-504/93, *Ladbroke*, 1997 ECR II 923: on appeal, case C-300/97P.

[70] The supply of TV broadcasts concerning horseracing was not essential for the applicant's business of running betting shops.

[71] Joined cases T-374/94, T-375/94, T-384/94 and T-388/94, *European Night Services Ltd (ENS), Eurostar (UK) Ltd, formerly European Passenger Services Ltd (EPS), Union internationale des chemins de fer (UIC), NV Nederlandse Spoorwegen (NS) and Société nationale des chemins de fer français (SNCF) v Commission of the European Communities*

[72] Craig, De Burca, *EU law, text, cases and materials*, p. 1027

1. The facility was indispensable to access to a market
2. Without access to the incumbent's service, it would be completely excluded from the market
3. Even if its resources were comparable to the incumbent in the primary market, it would still not be able to create a facility that would allow it entry to the market for providing the facility.
4. For access to be capable of being regarded as indispensable, it would be necessary at the very least to establish... that it is not economically viable to create a second home delivery scheme for the distribution of daily newspapers with a circulation comparable to that of the daily newspapers distributed by the existing scheme.

Unlike Magill, the Bronner case did not require any evidence that the denied facility was necessary for the creation of a "new product". This leaves us with the questions if that element is any less justified when the facility is not protected by intellectual property rights? And why that is so?

Recently the CFI held Microsoft accountable for abuse of a dominant position, based on Article 82, in all essential parts upholding a Commission decision from 2004.[73] The Microsoft case further develops the compulsory licensing case-law. In the case the Commission took an altogether more open-ended approach that could be characterised as a move towards a new "convenient facilities doctrine".

3.1.3 Refusal to supply interoperability information

Proceedings against Microsoft where initially started by Sun Microsystems. The Commission decided to try the case on the grounds of two different conducts. The first means of abuse was Microsoft's refusal to supply its competitors and customers with interoperability information. The second means of abuse was the tying of Windows Media Player with the Windows operating system. The second ground however, goes beyond the scope of this thesis and will not be discussed further here.

Although there is no general obligation even for dominant companies to ensure interoperability, leveraging market power from one market to another by refusing interoperability information may be an abuse of a dominant position.[74] In Microsoft the Commission has followed two lines of argument in demonstrating that the refusal to supply is abusive. Firstly, it has attempted to establish that information on interface is an essential facility. Secondly, it has advocated that Microsoft's disruption in refusing to supply reflect a leveraging and foreclosure conduct.[75] To remedy the abuse, the Commission ordered Microsoft to give access to specification

[73] COMP/C3/37.792, Microsoft and T-201/04 R *Microsoft v. Commission*
[74] Elhauge, Geradin, *Competition law and Economics*, p. 415
[75] Lévêque, *Innovation , Leveraging and Essential Facilities: Interoperability Licensing in the EU Microsoft Case*, p. 71

of interface protocols. Microsoft in its defence justifies its refusal to disclose with, the fact that the information required by its competitors is protected by several patents. Further, a compulsory licence would annihilate its efforts of innovation.

In this case, the Commission did not use the Bronner test, or the Magill/IMS test. The new product condition was not explicitly discussed, but the Commission did argue that Microsoft's refusal to supply resulted and will result, in blockading new functions of operating systems from appearing on the market, and thereby limiting technical development (by which the Magill/IMS test is in fact passed).[76] The Commission has further asserted in its decision that the criteria applied in IMS Health are not exhaustive, but that withdrawal of cooperation in respect of a previous generation of products, could establish the existence of exceptional circumstances.[77] The decision stated that the Commission is entitled to take into account 'other circumstances of exceptional character when assessing a refusal to supply' and that it is necessary to analyse the 'entirety of circumstances' and take a 'decision based on the results of a comprehensive investigation'.[78]

3.1.3.1 The Incentives Balance Test

The Commission consequently raises a new question in response of Microsoft's arguments claiming that intellectual property is an objective justification for its behaviour; *does the refusal to license reduce the incentives to innovate in the whole industry?* In other words, is a negative impact of a compulsory licence on dominant firm's incentives to innovate, outweighed by its positive impact on the innovation level of competitors? [79] This is interesting form an economic point of view, as it substitutes the questioning of product newness with the analysis of incentives. The relevant legal question for the CFI to decide on was therefore; if Microsoft's unwillingness to supply the information in question is disabling developers of non-Microsoft group operating server systems to remain on the market, and thereby hindering competition on the market?

Considering the strong links Microsoft had established between Windows client PCs and work group server operating systems, the Windows domain architecture was, according to the CFI, to be regarded as a standard for work group computing. The Court concludes from these facts that, the absence of interoperability information necessary to make a non-Microsoft product fully compatible with Windows had the effect of reinforcing Microsoft's position on the work group server operating systems market. CFI further states that, it is not necessary to demonstrate that all competition would be eliminated. It is merely enough to show that the refusal is liable or likely to eliminate all effective competition. It can be

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[76] COMP/C3/37.792 Commission decision in Microsoft, recital 693-700.
[77] Anderman, Kallaugher *Technology transfer and the new EU competition rules, intellectual property licensing after modernisation,* p. 280 note 10.34
[78] T-201/04 R *Microsoft v. Commission,* para 558
[79] Lévêque, *Innovation , Leveraging and Essential Facilites: Interoperability Licensing in the EU Microsoft Case*, p. 75

enough that the refusal limits not only production or markets, but also technical development and Microsoft's refusal prevents competitors from developing work group servers capable of attaining a sufficient degree of interoperability with the Windows operating system.

3.1.3.2 IPR and leveraging

The Court also notes that the information that Microsoft is obligated to share, due to the Commission's decision, constitutes only a very limited part of the protocols implemented in the Windows work group server operating system. The Court also emphasises that Microsoft's competitors would not be able to copy or reproduce Microsoft's products, which are protected by IPR. The only result would be that the competitors would allow their own products to function with the standard operating system. Actually, the Sun Solaris Work Group server OS was not a clone of the Microsoft server, it even preceded it in the market. This making it legitimate, for the Commission to impute Microsoft the exclusionary motive of using its control over the PC OS market to evict an *innovating* competitor. In other words, the conduct amounted to an abuse of 'technological' leveraging of its dominance.[80] Without the refusal, the competitors would produce new technical solutions and products.

The fact that Microsoft had previously made such information available to Sun and others, makes for an application of Article 82 and further results in the refusal to provide information being a change of policy. Such change is regulated more strictly than creation of a new relationship. This is clearly the case in non-IP cases,[81]and rather compelling in an IP context too. Where a dominant technology owner initially opted for an 'open' system as a strategy to grow and achieve dominance and creating legitimate expectation that such cooperation would continue.[82] This makes sense from the perspective that, if the firm is not otherwise selling its interoperability information, the only lost profits are the ones on the product that the rival seeks to make interoperable. Should those be relevant to ex ante investment incentives? Is it likely that a firm would not invest in creating a product because it must provide interoperability information to rivals that want to connect other products to it?

Microsoft's contention that Article 82 could not be applicable because the case did not satisfy the *Magill* criteria, by Sun not seeking to satisfy an unmet consumer need, is rejected by the Court. The Court though recognises the fact that following the Magill and IMS Health cases, an infringement of article 82 of this kind can be declared objectively justified. However, it merely notices that Microsoft's arguments are not valid as objective justification.

[80] Anderman, Kallaugher, *Technology transfer and the new EU competition rules, intellectual property licensing after modernisation,* p. 288 note 10.52

[81] See Case 6, 7/73 *ICI and Commercial Solvents v EC Commission* [1974] ECR 223, [1974] 1 CMLR 309.

[82] Anderman, Kallaugher, *Technology transfer and the new EU competition rules, intellectual property licensing after modernisation,* p. 288 note 10.53

3.1.3.3 Convenient facilities

In the end, Microsoft was ordered to give out information on the interoperability of their PC operating system to competitors on the software market, disclosing complete and accurate interface documentation on "reasonable and non-discriminatory terms", (the remuneration will be addressed further in chapter 4 and 5) allowing non-Microsoft work group servers to interoperate with Windows PCs and servers.[83]

The CFI's judgment is an important precedent in the IT industry. In relation to refusal to license, it has made the test for when compulsory licensing may be ordered, more complainant friendly. Once dominance and the indispensability of the IP at issue is demonstrated, the remaining parts of the compulsory licensing test, a likelihood that competitors will be excluded or marginalised and that the refusal to license prevents products with new features entering the market, may well be readily satisfied.[84] The Commission decision to take an altogether more open-ended approach could be characterised as a move towards a new "convenient facilities doctrine", meaning an asset without access to which it would be very inconvenient for rivals because they would need to offer customers a better product in order to overcome the advantages of the incumbent.[85] One might ask oneself how this “convenient facilities” approach can be reconciled with the ECJ’s IMS judgement. Is the "convenient facilities" approach justified in economic terms? In advocating a grand cost-benefit assessment under the convenient facilities doctrine, the Commission has in effect staked a claim to know where to draw the line between the benefits of rivalry and competition and the need to provide incentives to innovate.[86]

3.2 Conclusions

There is as of now, no general obligation under EC law for the IPR holder to license his IPR, not even, where the holder acquires a dominant position in the technology or product market. The very aim of the exclusive right is to prevent third parties from applying the IPR to produce and distribute products without the consent of the holder of the right. Should a successful holder of an IPR be required to grant a license to competitors because the IPR becomes dominant, that protection would be eroded. Even in return for a reasonable royalty, the IPR holder would be deprived of the substance of the exclusive right.[87] Nevertheless, refusal to license can be considered an abuse under Article 82, in *exceptional circumstances.*

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[83] Press Release: MEMO/07/148 Brussels, 23rd April 2007

[84] Batchelor, *The Fallout From Microsoft: The Court Of First Instance Leaves Critical It Industry Issues Unanswered*, p. 17

[85] Ridyard, *Compulsory Access Under EC Competition Law - A New Doctrine Of "Convenient, Facilities" And The Case For Price Regulation,* p. 670

[86] Ibid. p. 670-671

[87] Elhauge, Geradin, *Global Competition law and Economics,* p.414

In the pursuit of a general ground for legitimacy for competition law compulsory licensing, the idea that the holder of an IPR should not be able to extend his monopoly beyond the scope of the grant, has emerged. If a refusal to license is within 'the scope of the grant' it should be immune to competition law interference. However, in a context where it is used as leverage to extend the right beyond its limits, compulsory licensing can be imposed.

Abuse of Article 82 occurs when a dominant company satisfies the threefold test laid down first in Magill and then in IMS Health. In question is, if the use of the Incentives Balance Test in Microsoft has, significantly changed this to the benefit of the complainants. By requiring compulsory access to a facility without which it is inconvenient (rather than essential) for rivals to do business in the Microsoft case, the Commission has in effect declared an ability to micromanage competition in a way that goes well beyond the "last resort" intervention that normally characterises compulsory access cases. Where does this leave the value of the IPR? Microsoft had to license its interface information to competitors on*"reasonable and non-discriminatory terms"* (RAND). What that specifically entails, is the very essence of this thesis and will now be developed on below.

4 RAND in the EC

4.1 The concpet of RAND

RAND is as mentioned above, short for “reasonable and non-discriminatory” terms. The concept of RAND appears in Europe in both Article 82 situations, concerning abuse of a dominant position, and Article 81 situations, concerning agreements between parties (most often in a standard-setting context).

The above-mentioned Microsoft case deals with remuneration for a compulsory license, remedying a competition law violation, in terms of RAND. In the context of standard- setting however, the term used for remuneration to the participants vary depending on the standard-setting organisation (SSO). Companies are required to participate, on sometimes RAND and sometimes FRAND terms.

4.1.1 RAND v. FRAND

The Commission has indicated that effective access in standard setting, requires licensing on ‘fair reasonable, and non-discriminatory’, FRAND, terms. The concept appears to follow US precedents; however, US standard-setting cases refer only to reasonable and non-discriminatory terms, RAND. Whether this is an intentional distinction, between the concepts is not apparent. Interestingly enough, where the TT Guidelines deal with licensing terms in the context of Article 82, they refer to ‘fair and non-discriminatory terms’ leaving out the additional reference to ‘reasonableness’.[88] The ‘reasonableness’ criterion that otherwise appears in many Commission statements can be said to be almost completely devoid of meaning. Experience shows that, the terms on which compulsory access should be granted is a subject on which reasonable people can, and invariably do, disagree.[89]

As Commission documents are translated into various official languages, they are not appropriate for subtle textual analysis.[90] Partly for this reason, the Community court favours a ‘teleological approach’, interpreting legal requirements based on their intended purpose. Whether one can be *fair* without being *reasonable*, and vice versa, is hardly likely in the authors opinion. The non-discrimination principle has somewhat more content, though it is still hugely open to interpretation. Regardless of whether the term *reasonable* or *fair* or both is used, the RAND/FRAND concept is, in the absence of guiding case law, rather vague to its nature.

[88] TT Guidelines para. 226

[89] Ridyard, *Compulsory Access Under Ec Competition Law - A New Doctrine Of "Convenient, Facilities" And The Case For Price Regulation*, p. 671

[90] Anderman, Kallaugher, *Technology transfer and the new EU competition rules, intellectual property licensing after modernisation*, p. 253

The Commission has never, previously to the Microsoft case, dealt with the issue of how to decide what rate of payment is fair when there is no sound standard of comparison. In Magill, the Commission ordered the parties to agree on a reasonable rate, but the information on TV programmes is just a by- product and does not provoke incentives questions similar to the ones in Microsoft. An order of giving access on terms that were reasonable and non-discriminatory was also made in IMS, but with reference to the parties themselves agreeing to such terms. In Microsoft, the Commission in its decision gives some guidance on the price setting operation in the Pricing Principles.

4.1.2 The Microsoft Pricing Principles

In accordance with Microsoft´s duty to disclose complete and accurate interface documentation on RAND terms, Microsoft agreed to Pricing Principles on 31 May 2005. The mandate of the Monitoring Trustee, set up by the Commission decision[91], explicitly mentions the Pricing Principles as a reference point for his opinions on issues relating to remuneration. The Pricing Principles foresee that:

- Microsoft's pricing must permit implementation in a commercially practicable manner
- Microsoft can charge non-nominal prices only for protocol technology that is innovative and
- prices for such innovative protocols will reflect the market valuation of comparable technologies.

Initially, Microsoft had demanded a royalty rate of 5.95 % of revenues for a combination of access to the secret interoperability information and for a patent licence and had refused to make the licence compatible with the open source business model.

Based on the agreed criteria, the Commission reached the preliminary conclusion that Microsoft’s royalty rates were unreasonable and in a statement of objections of 1 March 2007, the Commission warned Microsoft of penalty payments over its unreasonable pricing.[92] The SO indicated the Commission’s preliminary view that there is no significant innovation in the part of the interoperability information for which Microsoft does not claim patent coverage,[93] and that the prices proposed by Microsoft for the interoperability information as a whole were unreasonable.[94] The Commission also stated that it would ensure that open

[91] The Monitoring Trustee was subsequently removed by the CFI in T-201/04 R *Microsoft v. Commission.*
[92] Commission Press Release IP/07/269, Brussels 1st of March 2007
[93] Rejecting as unfounded 1500 pages of submissions by Microsoft from December 2005 onwards.
[94] Commission Press Release IP/05/673, Brussels 6th of June 2005

source developers could have access to the non-innovative parts of the interoperability information.[95]

After alterations to comply with the Pricing Principles, Microsoft now offers two different agreements for access to interoperability information. The first is a "No Patent Agreement" allowing licensees access to the interoperability information, but without taking a licence for patents which Microsoft claims necessary, a claim disputed by some third parties. Microsoft has now made three changes to this licence:

- altering the terms of the licence so that it is compatible with the open source business model
- reducing the royalty to a flat fee of €10 000
- allowing effective private enforcement of warranties regarding the completeness and accuracy of the information provided.

The second licence, the "Patent Agreement", is for the patents which Microsoft considers relevant. Microsoft will now offer a worldwide patent licence for a reduced royalty of 0.4 % of licensees' product revenues.[96] Companies have a choice of agreement, depending on whether they consider they need a patent licence. In addition to the two licences, Microsoft will publish an irrevocable pledge not to assert any patents it may have over the interoperability information against non-commercial open source software development projects. These measures will ensure that Microsoft's competitors in the work group server market, including those following the open source business model, will have access to the interoperability information on reasonable terms. This will in turn lead to more competition and innovation in the market.[97] The royalties payable for the information will be reduced to a nominal one-off payment of €10 000. The royalties for a worldwide licence, including patents, will be reduced from 5.95% to 0.4% - less than 7% of the royalty originally claimed.[98]

The additional criteria that the Commission added, that Microsoft's remuneration from the licensing "should not reflect the strategic value stemming from Microsoft's power in the client PC operating system market or in the work group server operating systems market"[99] causes some confusion. It would be necessary to specify how far Microsoft's current prices are above the competitive level. However, there is nothing in the 300 pages of the Commission's decision that would allow the reader to derive this key piece of information.[100]

In conclusion, Microsoft case gives some guidance in the sense that the Court arrives at a specific royalty. Discussion on the underlying factors are however, not very clarifying, and a look into the

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[95] Commission Press Release IP/05/673, Brussels 6th of June 2005
[96] Commission Press Release IP/07/1567, Brussels 22nd October 2007
[97] Commission Press Release IP/07/1567, Brussels 22nd October 2007
[98] Commission Press Release IP/07/1567, Brussels 22nd October 2007
[99] Microsoft decision, para. 008(ii).
[100] Ridyard, *Compulsory Access Under EC Competition Law - A New Doctrine Of "Convenient, Facilities" And The Case For Price Regulation,* p. 672

discussion on RAND and FRAND terms in a standard-setting context may serve as valuable input.

4.1.3 RAND in a standard-setting context

The Horizontal Guidelines[101] define “standardisation agreements” as agreements that “have as their primary objective the definition of technical or quality requirements with which current or future products, production processes or methods may comply”.[102] Standards can be set by competition between several alternative techniques supported by individual groups or firms (market selection), by so called ‘standard setting organisations’, groups of companies specializing in certain technical areas and agreeing on technical design (industry bodies), or by governmental bodies, usually when safety is at stake. Standards can be open and accessible to all companies willing to implement them or closed and restricted to certain participants.[103]

In the context of technology licensing, the efficiency benefits of standard setting is of particular importance. It allows for products from different producers to operate together. The Horizontal Guidelines also indentify a risk of “foreclosure from key technology” for third parties where R&D efforts involve development of entirely new technology.[104]

The fact that a standard is required by a national authority and made legally binding does not mean that competition law is not applicable,[105] as held e.g. in *BNIC v. Clair*.[106] The clear benefit of standard setting, has however led to generally favourable treatment under Community law. In two cases in the 1970s[107] the Commission established the general principle that the combination of standards and cross-licenses or patent pools was not restrictive for purposes of Article 81, as long as licenses were available to competitors on “fair, reasonable and non-discriminatory terms” (FRAND). There is however little guidance as to what FRAND actually means.[108]

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[101] Commission Notice: Guidelines on the applicability of Article 81 of the EC Treaty to horizontal cooperation Agreements (2001/C 3/02), para. 159

[102] Anderman, Kallaugher, *Technology transfer and the new EU competition rules, intellectual property licensing after modernisation*, p. 246

[103] Guellec, Van Pottelsberghe de la Potterie *The Economics of the European Patent System IP Policy for Innovation and Competition*, , p. 105

[104] Horizontal Guidelines, para. 65

[105] Anderman, Kallaugher, *Technology transfer and the new EU competition rules, intellectual property licensing after modernisation*, p. 246

[106] Case 123/83 *BNIC v. Clair* [1985] ECR 391

[107] IGR, Fourtheenth Report on Competition Policy, 1984, point 94; IGR *Stereo Television*, Eleventh Report on Competition Policy, 1981, point 92.

[108] Anderman, Kallaugher, *Technology transfer and the new EU competition rules, intellectual property licensing after modernisation*, p. 247

4.1.4 FRAND and Article 82

Some have attempted to deduce the meaning of FRAND terms by reference to Article 82(a), which requires that dominant firms refrain from imposing 'unfair' prices or trading conditions, or to Article 82(c) which bars dominant firms from applying "dissimilar condition to equivalent transactions". Based on the fact, that it does not seem sensible to impose higher obligations regarding the terms of a licence under Article 81, than would be imposed on a dominant firm under 82, this makes sense.[109]

4.1.4.1 Article 82(a) unfair pricing

The only form of pricing specifically identified as abusive by Art. 82(a) is the imposition of an 'unfair' purchase or selling price.[110] So when is a price unfair? According to the Court, when the price charged is *disproportionate to the economic value of the services provided.*[111] In the case of manufactured goods, this is arrived at through a comparison of the sales price with the cost of production.[112] Such calculation is however difficult in reality, factoring in research, development and other fixed costs.[113] The Court has, also used comparisons to similar situations in other Member states, in order to find whether a royalty is excessive or not.[114] However, it should be noted that an undertaking may charge prices for patented products that are higher than for non-protected products.[115]

In the *Renault* case,[116] it has been established that, a proprietor of a patent should be given a fair return on the amounts, which he has invested. This indicates that costs for R&D should be included in the royalty. The question remains whether, future costs may be taken into account.[117]

In the case *Windsurfing International,*[118] it was established that royalty calculation needs to have its base in the price of sales of the patented invention (in this case the rig) and not the sales price of the whole windsurfing board. The latter was a prohibited limitation of competition.[119] This has also, later been taken into the Commission Guidelines on Technology Transfer.[120]

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[109] Anderman, Kallaugher, *Technology transfer and the new EU competition rules, intellectual property licensing after modernisation,* p. 253
[110] Case 27/76 *United Brands v. Commission* [1978] ECR 207
[111] Case C-340/99 *TNT Traco v Poste Italiane* [2001] E.C.R. I-4109, para.46, *Tetra Pak II* [1992] O.J. L72/1
[112] United Brands, paras. 251-257
[113] Fine, *The EC Competition Law on Technology Licensing,* , p. 122
[114] 110,241 & 242/88 *Francois Lucazeau and Others v. SACEM* [1989] ECR 2811, paras 25 and 30. See also 338/87 *AB Volvo v Erik Veng* (UK) Ltd. [188] ECR 6211, paras 8 and 9, 395/87 *Ministérier Public v. Jean Louise Tournier* [1989] ECR 2521.
[115] Luoma, *Compulsory licensing of Patents and European Community Law,* p. 66
[116] 53/87 *Maxicar (CICRA) v Renault* [1988] ECR 6039
[117] Luoma, *Compulsory licensing of Patents and European Community Law,* p. 66
[118] Case 193/83 *Windsurfing International Inc* v. *Commission* [1985] ECR
[119] Domeij, *Patentavtalsrätt,* p. 174
[120] Draft Commission Notice, Guidelines on the Application of Article 81 of the EC Treaty to Technology Transfer Agreements, section 78.

In the *SACEM- case* the ECJ stated that the amount of the royalty charged may be such that article 82 applies. "Article 86 [now 82] of the Treaty must be interpreted as meaning that a national copyright-management society holding a dominant position in a substantial part of the common market imposes unfair trading conditions where the royalties which it charges to discothèques are appreciably higher than those charged in other Member States, the rates being made on a consistent basis." [121]

The ECJ put it similarly in the *Tournier*- case, the ECJ stating that "[w]hen an undertaking holding a dominant position imposes scales of fees for its services which are appreciably higher than those charged in other Member States and where a comparison of the fee levels has been made on a consistent basis, that difference must be regarded ad indicative of an abuse of a dominant position."[122] It is then up to the right holder to motivate the suspiciously high licence fee.

4.1.4.2 Article 82(c) non-discrimination

'Non-discriminatory' is relatively easily applied in standard-setting if there is a standard of comparison, and once other companies have begun licensing, there is a standard of comparison for 'fair and reasonable' to.[123] In the standard-setting context, 'non-discriminatory' does not necessarily mean identical terms, but whether differences between the terms available to two firms or groups of firs in fact create a barrier to entry for one firm or group of firms. An economic perspective to 'non-discriminatory' terms may also be applied. Comparable treatment is enough in this sense. One example can be where, in a standard-setting cross-license situation, each licensee is obtaining the rights on a royalty-free basis under IPR necessary to apply the standard. This does not mean that a licensor is obliged to offer royalty-free licences to third parties who do not control IP rights that interest that licensor. The benefits under the cross-licences should be sufficiently comparable to royalty payments from the other parties to satisfy the non-discrimination requirement. This reflects the practice of the ECJ in applying Article 82(c).[124]

In *United Brands*, the ECJ expressly recognized that differences in "*transport costs, taxation, customs duties, the wages of labour force, the conditions of marketing, the differences in the parity of currencies,* [or even] *the density of competition*" could justify price differences.[125]

Because the restriction of output is at the core of the welfare effects analysis of price discrimination, as it is to the general notion of abuse under Article 82 EC, it is suggested that, from a legal perspective, price

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[121] *François Lucazeau and others v Société des Auteurs, Compositeurs et Editeurs de Musique (SACEM) and others*, Joined cases 110/88, 241/88 and 242/88 para. 33

[122] Tournier case, para 38

[123] Speach by Maurits Dolmans, Cleary Gottlieb Steen & Hamilton LLP ABA Section of Antitrust Law, IP Committee Brown Bag on Standards and IP Brussels, June 22, 2007

[124] Anderman, Kallaugher, *Technology transfer and the new EU competition rules, intellectual property licensing after modernisation*, p. 254

[125] Case 27/76, *United Brands v. Commission*, [1978] E.C.R. 207, para. 228.

discrimination should be assessed, like any type of potential abuse, based on its exclusionary and/or exploitative effects. Accordingly, price discrimination should be held abusive, only if it distorts competition, i.e., entails anticompetitive effects, and not if it merely results from the application of different prices to similar transactions, causing some 'disadvantage' to customers competing against one another.[126] Although the Commission did again recently, in the *Clearstream* case,[127] take a different stance in light of economic theory. The Commission reached the conclusion that, price discrimination is abusive only to the extent that it actually distorts competition, after it concluded that the observed price difference lacked objective cost justification. It did not establish, however, that competition between Euroclear and CSD's (both Central Securities Depositories) had been distorted as a result of the different prices they were charged for Clearstream's services. In other words, it derived harm to competition from the mere observance of price differences.[128]

Price discrimination has ambiguous welfare implications. It can be beneficial if it allows monopolists to expand output beyond the level set at a uniform price, by allowing more consumers to access the goods or services in question. It can likewise, encourage price competition; if a dominant supplier cannot discriminate, a buyer would, in theory, not gain competitive edge through price negotiation and the supplier will have greater incentive to resist price reductions.[129]

One problem in standard setting is however, that the implementer never knows what kind of a deal another implementer got in any event, because the vendor has no obligation to disclose those terms or report back to the standards organization on whether or not it is meeting its FRAND obligations. Further, standard setting organizations do not have the budget or resources to act as arbitrators to settle disputes, and therefore refuse to do so. Are the courts and authorities more fit to decide on what is FRAND?

4.1.5 Investigations by the Commission

4.1.5.1 Qualcomm

The European Commission has decided to open formal anti-trust proceedings against Qualcomm Incorporated, a US chipset manufacturer, concerning an alleged breach of EC Treaty rules on abuse of a dominant market position, Article 82.

Qualcomm is a holder of IP rights in the CDMA and WCDMA standards for mobile telephone. The WCDMA standard forms part of the 3G standard for European mobile phone technology. Complaints have been

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[126] Gerard, *Price Discrimination Under Article 82 (2) (C) EC: Clearing Up The Ambiguities*, p. 8
[127] Commission decision of 2 June 2004, *Clearstream*, not yet published but available at www.europa.eu.int/comm/competition/antitrust/cases.
[128] Gerard, *Price Discrimination Under Article 82 (2) (C) EC: Clearing Up The Ambiguities* p. 8
[129] Ibid. p. 4

lodged with the Commission by Ericsson, Nokia, Texas Instruments, Broadcom, NEC and Panasonic, all mobile phone and/or chipsets manufacturers, alleging that Qualcomm's licensing terms and conditions are not Fair, Reasonable and Non-Discriminatory (FRAND) and, therefore, may breach EC competition rules. [130]

The companies complain that Qualcomm is not offering patent licenses on FRAND terms which could inhibit competition and hurt consumers by slowing the development of new phones. By making it harder for companies to work together, it could also harm the standard setting process. Qualcomm on the other hand says that its licensing model has allowed new vendors to enter the market, resulting in a greater variety of products and falling handset prices.

The investigation will focus on whether Qualcomm is dominant and whether the licensing terms and royalties imposed by Qualcomm are, as alleged by the complainants, not fair, reasonable and non-discriminatory. The legal base of this procedural step is Article 2(1) of Commission Regulation No 773/2004. Article 2 of the regulation provides that, the Commission can initiate proceedings with a view to adopting at a later stage a decision on substance according to Articles 7-10 of Regulation No 1/2003 at any point in time, but at the latest when issuing a statement of objections or a preliminary assessment notice in a settlement procedure. In the present case, the Commission has chosen to open proceedings before such further steps. The Commission set no timetable for completion of its investigation, although it said it would be "a matter of priority."

4.1.5.2 Rambus

The European Commission has also sent a Statement of Objections to the American company Rambus on 30 July 2007. The statement of objection outlines the Commission’s preliminary view that Rambus has infringed EC Treaty rules on abuse of a dominant position, established in Article 82, by claiming unreasonable royalties for the use of certain patents for “Dynamic Random Access Memory” chips (DRAMS) subsequent to a so-called "patent ambush".

The statement of objections outlines the Commission’s preliminary view that Rambus engaged in intentional deceptive conduct in the context of the standard-setting process, for example by not disclosing the existence of the patents which it later claimed were relevant to the adopted standard. This type of behaviour is known as a "patent ambush". Against this background, the Commission provisionally considers that Rambus breached the EC Treaty's rules on abuse of a dominant market position by subsequently claiming unreasonable royalties for the use of those relevant patents. The Commission's preliminary view is that without its "patent ambush", Rambus would not have been able to charge the royalty rates it currently does.

[130] Commission MEMO/07/389 Brussels 1st October 2007

This is the first time that the Commission is dealing with a "patent ambush" under EC antitrust law, but the approach reflects well-established general case-law under Article 82 of the Treaty.

In parallel proceedings in the US, the Federal Trade Commission (FTC), issued an order in August 2006 and in February 2007 whereby it found that Rambus had engaged in illegal monopolisation and imposed a remedy applicable to US patents and foreign patents to the extent that they relate to import or export of relevant products into or from the US (this will be addressed further, in chapter 5).

As Rambus is active worldwide and has obtained patent protection for the relevant technologies in Europe and it is enforcing its patents against companies applying the relevant standards in Europe, these companies are therefore exposed to litigation over the relevant European patents and may not seek relief on the basis of the US decision. Commission action is therefore, considered appropriate.

The Statement of Objections preliminarily concludes that the appropriate remedy to such an abuse would be that Rambus charge a reasonable and non-discriminatory royalty rate, the precise amount of which should be determined having regard to all the circumstances of the case.[131]

4.2 Conclusions

As for the difference between RAND and FRAND, the discussion above shows that the difference is hardly significant, at least useful parallels can be drawn between the two terms. Economic principle underlying RAND in a standard setting context (then sometimes referred to as FRAND) is well understood: essential patent holders should not be able to exploit the added power gained as a result of being included in the standard. In the case of compulsory licensing similar considerations seem to underlie RAND obligations; IP right holders should not be able to exploit the exclusive right granted by the patent or copyright.

Fair and reasonable indicates consideration of proportionality, an equitable balancing of all interests, taking into account interest in development of the standard, implementers, users, innovation, etc. Leaving IP owners incentive to innovate, but without seizing the entire value of the standard.

Non-discrimination refers to equal treatment of all customers, including the IPR-owner's own downstream business, so as to enable a level playing field. In this context 'non-discriminatory' does not necessarily mean identical terms, but whether differences between the terms available to two firms or groups of firms in fact create a barrier to entry for one firm or group of firms. However, there should be no restriction of downstream competition on the merits; no price-squeeze, no terms and conditions that have the object or effect of restricting downstream competition, no differential treatment based on whether licensee purchases the licensor's

[131] European Commission Press Release MEMO/07/330, Brussels, 23rd August 2007

downstream product and no restriction of upstream technology competition.[132]

These duties, set for participation in standard-setting, however apply under 81 and 82 EC anyway. FRAND actually reflects Article 82(a) and 82(c) EC verbatim.[133]

Even though 82(a) and 82(c) do not help point out a specific royalty they give some helpful guidelines. 82(a) covers exploitative conduct, that is "directly or indirectly imposing unfair purchase or selling prices or other unfair trading conditions." The Community institutions have generally applied a two-stage test to assess whether a price is excessive. This test requires first, comparing actual costs and prices and second, determining whether a price is excessive in itself or by comparison to competitors' products.[134] The developing law under article 82(a) may be relevant in assessing if prices, including royalty terms may be 'unfair' if they are not consistent with pricing in comparable markets, or if they are intrinsically unfair in light of their inherent value.

In the wait for further case law, possibly in the form of a Qualcomm decision, or Rambus investigation let us look to the US, where both companies have already been in trouble, and RAND have been further developed on.

[132] Speach by Maurits Dolmans, Cleary Gottlieb Steen & Hamilton LLP ABA Section of Antitrust Law, IP Committee Brown Bag on Standards and IP Brussels, June 22, 2007
[133] Speach by, Maurits Dolmans, Cleary Gottlieb Steen & Hamilton LLP ABA Section of Antitrust Law, IP Committee Brown Bag on Standards and IP Brussels, June 22, 2007
[134] See United Brands case.

5 RAND in the U.S.

The United States has led the world in issuing compulsory licenses to restore competition when, violations of the antitrust laws have been found or in the negotiated settlement of antitrust cases before full adjudication has occurred.[135] Some of the U.S. antitrust decrees have required licensing at zero royalty rates, but most provide for ‘reasonable’ royalties.

As far as refusal to license is concerned, there is generally no obligation for a firm to cooperate with its rivals.[136] The right to deal with whom one pleases is thought of as a constitutionally protected right. This was stated, in the *Colgate case*.[137] In *Aspen Skiing*[138] however, the Supreme Court created an exception to this rule by holding that the decision of a defendant who possessed monopoly power to terminate a voluntary agreement with a smaller rival evidenced the defendant’s willingness to forego short-run profits for anticompetitive purposes. The Court has since refused to expand this exception. Most recently in *Trinko*[139], the Court considered whether plaintiffs stated a claim under Section 2 of the Sherman Act by alleging that the defendant did not honour a statutory duty to give competitors access to its telecommunications network on “just, reasonable, and non-discriminatory” terms.[140] The Court held that they did not.

Section 2 of the Sherman act
“Every person who shall monopolize, or attempt to monopolize, or combine or conspire with any other person or persons, to monopolize any part of the trade or commerce among the several States, or with foreign nations, shall be deemed guilty of a felony...”

Compulsory licensing has been used as a remedy for competition law claims, as well as for successful essential facilities claims. According to the Supreme Court in *Glaxo, “(m)andatory selling on specified terms and compulsory patent licensing at reasonable charges are recognized antitrust remedies.”* [141] They have however fallen out of favour on accounts of the remedies being ineffective in deconcentrating markets and involving courts in the difficult determination of what rate should be charged for the relevant license.[142]

Three tests has been used by the courts in the United States in order to determine if a monopoly company has unlawfully refused to deal or

[135] By the end of the 1950s, compulsory licenses had been issued in roughly 100 antitrust cases covering an estimated 40 to 50 thousand patents, including AT&T's basic transistor concept patents, IBM's computer and tabulating card machine patents, General Electric's fluorescent and incandescent lamp patents, Du Pont's nylon patents, and Eastman Kodak's color film processing patents.
[136] *Monsanto Co. v. Spray-Rite Serv. Corp.*, 465 U.S. 752, 761 (1984).
[137] *United States of America v. Colgate & Co*., 250 US 300 (1919)
[138] *Aspen Skiing v. Aspen Highlands Skiing*, 472 U.S. 585 (1985) at 610-11
[139] *Verizon Communications, Inc. v. Law Offices of Curtis V. Trinko* (540 U.S. 398 2004), at 410-11
[140] *Aspen Skiing case*, at 401, 405-06.
[141] *U.S vs. Glaxo Group Ltd* 410 US 52, 93 S.Ct. 861US.Dist.Col. 1973.
[142] Balto, Wolman *Intellectual Property And Antitrust: General Principles*, p. 472

not; the test of changes in the pattern of dealing, the Essential Facilities Doctrine and the Monopoly Leveraging Doctrine. Further, it must also be shown that the refusal to deal had an overall anti-competitive impact on the market. If the undertaking can show objective justifications for its refusal, it will not be considered a breach of Section 2 of the Sherman Act.

US Federal Trade Commissions Bureau of Competition, in conjunction with the Bureau of Economics, seeks to prevent business practices that restrain competition. The Bureau carries out its mission by investigating alleged law violations and, when appropriate, recommending that the Commission take formal enforcement action.[143] In contrast with the EU Commission and National Competition Authorities in Europe, the US agency need litigation before courts of law to obtain a finding of infringement, negotiate behavioural and/or structural remedies and impose fines.[144]

The competition policy precedents of leading European nations and the European Community are in this respect more expansive than those of the United States. EC competition authorities are more inclined to issue "conduct" orders such as resuming delivery to previous customers, as in the *Commercial Solvents* case,[145] than the U.S. authorities' do.[146]

In general, the U.S. position on compulsory licensing is, as recognized above, that "compulsory licenses for the benefit of private competitors are not favoured by the tradition of American statute law, except as sanctions for actual violation of the antitrust laws."[147] In using compulsory licensing as an anti-trust remedy however, they are leading the development. Two cases will serve as an illustration and comparison.

5.1.1 Broadcom v. Qualcomm

Qualcomm has been involved in several controversies. Both, as above mentioned in Europe, and in the US. Broadcom is a supplier of integrated circuits for broadband communications filed its original complaint in the District court of New Jersey July 1 2005. They filed suit against Qualcomm, alleging that Qualcomm by its intentional deception of the private standards setting organizations and its predatory acquisition of a potential rival, has monopolized certain markets for cellular telephone technology and

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[143] Commission jurisdiction, FTC act 15 U.S.C § 45.

[144] Elhauge, Geradin, *Global Competition law and Economics*, p. 40

[145] Joined cases 6 and 7/73 *Commercial Solvents v Commission [1974] ECR 223,* where a company that controlled patented processes used to produce a key chemical intermediate for a drug effective against tuberculosis was found under Article 86 [now 82] of the EC treaty to be abusing its monopoly power when, after entering into production of the drug through its own subsidiary, it subsequently refused to sell or license the intermediate to an independent pharmaceutical manufacturer. The manufacturer was ordered to resume delivery to the independent manufacturer.

[146] Scherer, *The Economics of Compulsory Drug Patent Licensing*, p. 4

[147] Julian-Arnold, *International Compulsory Licensing: The Rationales And The Reality*, p. 13

components, primarily in violation of Sections 1 and 2 of the Sherman Act and Sections 3 and 7 of the Clayton Act.[148]

The underlying facts at issue involved Qualcomm's participation in the creation of the Universal Mobile Telecommunications System (UTMS) standard, which was under development in the European Telecommunications Standards Institute, ETSI. Qualcomm volunteered technology owned by it for inclusion in the standard, and in return agreed that it would freely license any patent claims that it owned, that would be infringed by implementing the standard. Specifically, Qualcomm made the traditional pledge to license its patent claims on "fair, reasonable and non-discriminatory" (or FRAND) terms.

The District Court dismissed the complaint for failure to state a claim upon which relief can be granted, pursuant to Rule 12(b)(6), Federal Rules of Civil Procedure. The reasoning on the Section 2 monopolization and attempted monopolization claims[149] was that these allegations do not state a claim because conferring monopolies is what patents do, and eliminating competition is what standards do. Qualcomm enjoyed a legally-sanctioned monopoly in its patented technology, and that this monopoly conferred the right to exclude competition and set the terms by which that technology was distributed. The inclusion of Qualcomm’s WCDMA technology in the UMTS standard did not harm competition because an absence of competition was the inevitable result of any standard setting process. That inclusion of Qualcomm’s technology may have been the product of deception was of no moment under antitrust law, the Court continued, because no matter which company's patented technology ultimately was chosen, the adoption of a standard would have eliminated competition. Broadcom brought an appeal. [150]

5.1.1.1 (F)RAND- an empty promise?

In the Court of Appeals, Qualcomm contended, that no specific licensing terms were promised to SSOs because; FRAND terms lack a strict meaning. In response to Broadcom's allegation that Qualcomm's royalty rate is far greater than other WCDMA royalty rates, Qualcomm argues that it can charge whatever royalty rate the market will bear. Qualcomm takes the position that offering discounted royalties and waived licensing fees in exchange for purchases of its UMTS chipsets is lawful conduct, pro-competitive price competition. Notably, Qualcomm contends that it offered Broadcom the same standard rates and terms that others have accepted. Thus, Qualcomm contends that it either satisfied its FRAND assurances, or such assurances are unenforceable because they lack specific licensing terms and a single universal interpretation.

Broadcom contends that courts can interpret RAND just as courts interpret language such as "good faith", "commercially reasonable",

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[148] The Clayton Antitrust Act of 1914, (October 15, 1914, ch. 323, 38 Stat. 730, codified at 15 U.S.C. § 12–27, 29 U.S.C. § 52–53), was enacted in the United States to add further substance to the U.S. antitrust law regime by seeking to prevent anticompetitive practices in

[149] Counts one and two of the complaint.

[150] *Broadcom Corp. v. Qualcomm Inc.*, Case No. 06-4292 (3rd Cir. 9/4/07)

"usual and customary", or "reasonable efforts" and "best efforts”. In its opposition to Qualcomm's motion to dismiss, Broadcom also cites a case where a district court held that it could "easily" determine the meaning of the defendant's promise to license on FRAND terms by looking to other licence agreements of the defendant and customs of the defendant and the industry. Broadcom also suggests that courts are just as capable of determining RAND as they are of determining a “reasonable royalty” in an infringement damages case.

5.1.1.2 ‘Reasonable price’- The 15 Georgia Pacific Factors

From an economic perspective, the requirement for a reasonable rate is somewhat confusing; the notion is simply not used. Unlike the concept of optimal price, reasonable price suggests a range of acceptable values, not a single figure. [151] In the United States, *reasonable price* is used for price setting in patent infringement cases. The principle consists in imagining a hypothetical royalty bargaining between the parties, as if licensing had been pursued instead of infringement. The maximum the licensee would have been willing to pay and the minimum that the licensor would have been willing to accept sets the range of acceptable value.[152]

In *Standard Manufacturing*[153] the U.S. Court employed a two-step approach to determining a litigated reasonable royalty. The first step involved an estimation of an initial or “baseline” rate. The Court referred both to expert Robert Goldscheider, and the fact that a number of other federal courts had recognized that the 25 % rule[154] is a “rule of thumb” typical in the licensing field, when finding its application appropriate for determining the baseline royalty rate.[155] The second step entailed an adjustment upward or downward depending on the relative bargaining strengths of the two parties with respect to each of the 15 factors described in *Georgia-Pacific Corp. v. United states Plywood Corporation.*[156]

In contrast, Qualcomm contends that the reasonable royalty standard is irrelevant because it is intended for measuring damages rather than determining whether licensing terms are fair, reasonable and non-

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[151] Lèvéque, *Innovation, leveraging and essential facilities: interoperability licensing in the Microsoft case*, p. 88

[152] To aid lawyers in the determining of the end-points, use is often made of the so-called fifteen Georgia Pacific factors established in Georgia-pacific Corp. v. US Plywood Corp.,318 F Supp.1116,1120 (SDNY 1970) modified on other grounds, 446 F 2d 295 (2d Circ.1971). See supplement A for a complete list of the 15 factors.

[153] *Standard Manufacturing Co., Inc and DBP, Ltd. V. United States,* No. 641-85C and 95-431C, January 25, 1999

[154] The 25% rule is based on an estimate of the licensee’s expected profits, for the product that embodies the intellectual property at issue. Those profits are divided by the expected net sales over that same period to arrive at a profit rate, which is then multiplied by 25% to arrive at a running royalty. More on this method in Chapter 6.

[155] Smith, Parr, *Intellectual Property Valuation, exploitation and infringement damages*, p. 417

[156] *Georgia-Pacific Corp. v. United States Plywood Corporation*, 318 F. supp. 1116 (S.D.N.Y. 1970), *modified and aff’d*, 446 F.2d 295 (2d Cir. 1971) See Supplement A for a complete list of the 15 factors.

discriminatory. Yet both approaches apply the term "reasonable" in a royalty context.

In the end, the Court was not persuaded by Qualcomm's argument that antitrust liability cannot turn on so vague a concept as whether licensing terms are “reasonable,” although in other contexts, the court has summarily dismissed claims that turn on similarly ambiguous terms.[157] The reasonableness of royalties is an inquiry that courts routinely undertake using the 15-factor test set forth in *Georgia Pacific*[158], and some courts have already applied this test in the FRAND context.[159] Their success persuaded the Court that, given a fully-developed factual record, the same can be done in determining FRAND.[160] One of the successes is the *Rambus case*.[161]

5.1.2 The Rambus case

Rambus, a company that holds the patents to the most common type of memory used in computers today, SDRAM -- and its successor DDR DRAM, comprising more than 80% of the market. For more than four years in then 1990s, Rambus participated as a member of the Joint Electron Device Engineering Council (JEDEC), a standard setting organisation that operated on a co-operative basis.

The FTC complained against the company, alleging that through a course of deceptive conduct, Rambus exploited its participation in JEDEC to obtain patents that would cover technologies incorporated into now-ubiquitous JEDEC memory standards, without revealing its patent position to other JEDEC members. As a result, Rambus was able to distort the standard setting process and engage in anti-competitive "hold up" of the computer memory industry.[162]

The Complaint Counsel, by asking the Commission to enjoin Rambus from enforcing its pre-1996 patents with respect to JEDEC-compliant products, in effect request that the Commission order royalty-free compulsory licenses. Rambus in turn argued that even if the Commission has remedial power beyond the issuance of a cease-and-desist order, the Commission does not have the authority to order compulsory licensing on terms prescribed by the Commission.[163] The Commission disagreed; referring to the broad authority of the Commission and the district courts to remedy violations of the FTC Act and the other antitrust laws includes “mandatory selling on specified terms and compulsory licensing at reasonable charges.”[164] Courts have blessed compulsory licensing orders in

[157] See *Lum v. Bank of America*, 361 F. 3d 217 (3d Cir. 2004) at 226
[158] *Georgia-Pacific Corp. v. United States Plywood Corp*., 318 F.Supp. 1116, 1120 (S.D.N.Y.1970)
[159] See, e.g., *ESS Tech., Inc. v. PC-Tel, Inc.*, No. C-99-20292 RMW, 2001 WL 1891713, at *3-6 (N.D.Cal. Nov.28, 2001); see also Rambus, No. 9302, at 114-15 (finding substantial evidence that Rambus's royalty rates were not reasonable)
[160] *Broadcom v. Qualcomm*, Note 16
[161] *Rambus, Inc. v. Infineon Techs. AG*, 330 F. Supp. 2d 679, 696-97 (E.D. Va. 2004).
[162] Broder, *United States: Monopolisation - Computer Technologies*, E.C.L.R. p. 1
[163] In the Matter of Rambus, Inc.Docket No. 9302 , Opinion of the commission on remedy
[164] *United States v. Glaxo Group*, 410 U.S. 52, 64 (1973).

the past, including at least one crafted by the Commission.[165] The FTC found that Rambus's acts of deception constituted exclusionary conduct under Section 2 of the Sherman Act, and that Rambus unlawfully monopolised the markets for four technologies incorporated into the JEDEC standards in violation of Section 5 of the FTC Act.[166]

After having determined the scope of liability, the FTC stated that it believed it would exercise its broad remedial powers most responsibly after additional briefing and, if necessary, oral argument devoted specifically to remedial issues. The FTC instructed the parties to address, without limitation:

(1) means for the FTC to determine, based on the existing record, reasonable royalty rates for licensing all technologies applicable to JEDEC-compliant products and covered by relevant Rambus patents;

(2) alternative mechanisms and procedures for determining reasonable royalty rates, such as an independent arbitrator, a special master, or an administrative law judge;

(3) qualitative characteristics descriptive of appropriate relief, against which specific royalty proposals might be evaluated; and

(4) appropriate injunctive and other provisions that should be incorporated in the Final Order in this proceeding.

5.1.2.1 An appropriate remedy

Compared to the extensive treatment of liability standards, antitrust courts have devoted relatively little attention to the question of remedies. The comparatively few modern cases that have addressed remedies have provided limited guidance about the suitability of specific cures for illegal monopolization.[167]At one end of the remedy spectrum are controls on conduct, which the cases tend to depict as relatively less drastic. At the other end are structural measures such as divestiture, which courts have tended to regard as being more drastic. Compulsory licensing often lies between the two ends of the spectrum, although courts sometimes have likened compulsory licensing to “structural” relief where the licensing at issue enables the licensee to compete against the defendant in the relevant product market.[168]

Most recently, in *Massachusetts v. Microsoft Corp.*,[169] the D.C. Circuit, affirming the district court’s refusal to order royalty-free licensing, held that requiring Microsoft to license Internet Explorer on a royalty-free basis, as sought by the Commonwealth of Massachusetts, was a “de facto” divestiture that would require a more “significant causal connection.”[170] Collectively, the case law appears to indicate that the farther

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[165] *See* United States v. Nat’l Lead Co., 332 U.S. 319, 349 (1947) (upholding compulsory licensing remedy); United States v. United Shoe Mach. Corp., 110 F. Supp. 295, 351 (D. Mass. 1953) (same).

[166] The Federal Trade Commission Act of 1914 (15 U.S.C §§ 41-58, *as amended*)

[167] Rambus case, Opinion of the commission on remedy, p. 8

[168] Rambus case, Opinion of the commission on remedy, p. 9

[169] *Massachusetts v. Microsoft Corp* 373 F.3d 1199 (D.C. Cir. 2004)

[170] *Massachusetts v. Microsoft Corp*, at 1233.

remedies expand beyond simple prohibitions against future anticompetitive conduct (with divestiture at the other outer end), the stronger the proof that is needed to justify the remedy.[171]

The Court states that, although they do not relish imposing a compulsory licensing remedy, the facts presented make that relief appropriate and indeed necessary to restore competition. There is no direct evidence as to what royalty rates would have resulted from *ex ante* SDRAM negotiations among the parties had Rambus not engaged in the unlawful conduct. While there is some evidence that supports the possibility that JEDEC would have chosen alternative technologies, Complaint Counsel have not met the burden of demonstrating that restoring the competition that would have existed in the "but for" world requires that Rambus license its technology with no compensation.[172]

Naturally, adjudicators rarely if ever have such direct proof of the "but for" world before them. An antitrust remedy, however, can be adequate even if knowledge of the "but for" world is imperfect. Indeed, to require the kind of detailed and concrete proof of injury that is available in other contexts would allow a wrongdoer to benefit from the uncertainty that its own unlawful conduct has created.[173]

The parties agree that the "*ex ante* value of a technology is the amount that the industry participants would have been willing to pay to use a technology over its next best alternative prior to the incorporation of the technology into a standard." In determining what royalty rates likely would have resulted from *ex ante* SDRAM negotiations, the Commission may look to real-world examples of negotiations involving similar technologies.[174]

5.1.2.2 Finding the "but for" world

In the efforts to restore competitive conditions to those that would have prevailed in the "but for" world, the Commission deemed the RDRAM license agreements found in the record as the best available evidence from which to base our estimate of the likely "but for" results of negotiation. RDRAM royalty rates serve as an extraordinarily useful benchmark because they are the product of individual, arm's-length negotiations between Rambus and manufacturers of DRAM chips and DRAM-compatible components for the use of all of the technologies at issue in this case and more.[175] The record states that, beginning in 1990, Rambus offered to license its RDRAM technology to manufacturers of DRAM chips and DRAM-compatible microprocessors, and it sought to "position RDRAM as the *de facto* standard." RDRAM failed to achieve significant market success, however, as industry participants instead turned to standards promulgated by JEDEC.

During the 1990s, Rambus licensed its proprietary RDRAM technologies at high-volume rates averaging 1-2% for use in DRAM chips,

[171] Rambus case, Opinion of the commission on remedy, p. 11
[172] Ibid. p. 16
[173] Ibid. p. 17
[174] Ibid. p. 18
[175] Ibid. p. 19

with the rates declining significantly over time and with increases in the number of shipped units.[176] E-mail from CFO Geoff Tate also confirms an average rate of 1-2 %, not only as an introductory period as Rambus claims.[177]

In making the required "discriminating judgment reflecting [our] ultimate appraisal of all pertinent factors in the context of the credible evidence," [178] the Commission must consider several factors, each of which pointed to a reasonable royalty rate lower than the typical RDRAM royalty.

1. Rambus's RDRAM licenses covered substantially more technologies than those relevant here;
2. RDRAM royalty rates typically declined substantially for high volumes and with the passage of time; [179]
3. there is substantial evidence that market participants viewed the RDRAM royalties as too high for RDRAM to achieve a major presence in the market[180]
4. because it is Rambus's own unlawful conduct that prevents perfect replication of the "but for" licensing picture, plausible doubts should be resolved against Rambus.

Together, these factors point to a reasonable royalty substantially below the 1-2% RDRAM range.[181]

The RDRAM licenses, in addition to requiring per-unit royalties, obligated licensees to make up-front, lump-sum payments of licensing fees. On accounts of this, the Commission deemed it appropriate to trade off compensation payable up-front and compensation based on future usage, with an increase in one compensating for a decrease in the other.[182]Although up-front licensing fees was accounted for by increasing slightly their estimate of the maximum royalty rates consistent with restoring competition, the remedy's coverage of a substantially shorter period than the RDRAM licenses and its exemption of a substantial portion of Rambus's JEDEC-compliant business, suggest that the adjustment should be small. Thus, starting at 1% - the lower end of the RDRAM licensing range – and accounting for the factors presented above, the Commission found that a maximum royalty rate of 0.5% for DDR SDRAM, for three years from the date the Commission's Order is issued and then going to zero, is reasonable and appropriate.

The Commission also had to determine an appropriate maximum royalty rate for memory controllers and other components that use the relevant Rambus technologies in complying with JEDEC's

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[176] In the Samsung RDRAM license, for example, the rate drops to zero five years after shipment of the 500,000th unit, provided that more than 10 million units had been shipped
[177] Rambus case, Opinion of the commission on remedy p. 20
[178] As established in *Georgia Pacific*, 318 F. Supp. 1116 at 1120-21.
[179] For Samsung, a significant DRAM producer, the rates ultimately declined all the way to zero, see Rambus case, Opinion on remedy, p. 21
[180] For example, Intel regarded a royalty of less than .5% as appropriate for commodity RDRAM, and JEDEC JC-42.3 subcommittee minutes from March 1997 reflect broad-based misgivings regarding RDRAM royalty rates.
[181] Rambus case, Opinion of the commission on remedy p. 22
[182] Ibid.

SDRAM and DDR SDRAM standards. The RDRAM licenses in the record, cited above, either set a royalty of between 3% and 5% for the use of Rambus technologies in memory controllers, microprocessors, and other non-DRAM components, or they leave the rates open for future negotiation, generally specifying a maximum of between 3% and 5%. That is more than double the large-volume royalties for DRAMs. Based on this evidence, the Commission adopted a coefficient of two for determining the maximum royalty rate for memory controllers and other non-memory-chip components that use the relevant Rambus technologies. For such products compliant with the SDRAM standard, this yields a maximum royalty of 0.5%, dropping to zero after three years; for such products compliant with the DDR SDRAM standard, this yields a maximum royalty of 1%, again dropping to zero after three years.[183]

A unanimous Commission concluded that Rambus engaged in monopolistic practices in violation of Section 5 of the FTC Act by abusing the process for setting industry standards for DRAM chips. The majority determined the maximum reasonable royalty rate that Rambus was permitted to charge for the relevant technology and barred Rambus from collecting or attempting to collect more than the maximum allowable royalty rates for companies that might already have incorporated its DRAM technology. Two Commissioners dissented from the majority's decision, and wanted to impose zero royalty rate licensing provisions.[184]

5.2 Conclusions

The Qualcomm case shows that the term “reasonable royalty” can be determined by a court just as “easily”, in standard setting or competition situations as in calculations of damages in infringement cases. In the U.S. Rambus case, the benchmarks used to determine whether a royalty is ‘reasonable’ was the existence and viability of technical alternatives ex ante to determine value and that royalties should not exceed incremental value compared to next-best alternative. According to the Rambus case ‘reasonable royalty’ approximates the outcome of an auction-like process appropriately designed to take lawful advantage of the state of competition existing ex ante among available IP options‘.

The Court in Rambus took in five factors when adjusting the final royalty. 1, comparison with earlier technology; 2, the technology’s typical royalty levels for said markets, 3, market participants view of the previous royalty; 4, Rambus own unlawful conduct (which should be reflected in the uncertainty reflected against them).

The above case law gives some guidance as to RAND and the mechanisms behind the concept, though circumstances, as always, alter cases. What can be deducted from these experiences? Can a formula be produced? Below follows a discussion on intellectual property valuation, taking into consideration the abovementioned case law.

[183] Rambus case, Opinion of the commission on remedy p. 24
[184] See dissenting opinion by Thomas Rosch and Pamela Jones Harbour

6 Analysis

6.1 Calculating RAND royaly

So how should RAND royalty be calculated? From the case law investigated we can draw the conclusion that the EC courts as well as the US courts are reluctant to set a fixed royalty between parties, and when they are forced to, they try to as far an extent as possible, to resemble a royalty produced in "arms- length" negotiation (between parties that are independent and on an equal footing).

License creations are often important transactions in their own right, but they may also be a part of multi-faceted arrangements to meet both the short and long-term objectives of the parties. In a freely determined royalty, there are therefore many alternative methods for achieving a mutually-satisfactory bottom line. Questions which help quantify the profit potential of a specific license are amongst others; the size of the relevant market, dynamism of market, special characteristics of technology intended to be licensed, quality of contribution by the proprietor, expected asset contributions from the technology recipient and the general state of the economy.[185] However, there is no single way of determining a royalty, and in each situation, it is up to the parties to decide on the means of getting there.

Even though licensing displays clear variation across industries, it is much more developed in the information technology (IT), biotechnology, and chemical industries, with a focus of IT on cross-licensing, intellectual property, like any asset, can be valued using three sets of tools, *the income approach*, *the market approach* and *the cost approach*.[186] Based on these concepts and taking in the indications of the case law up to date, and references to economic doctrine, an illustration of possible ways to calculate RAND royalty will follow.

6.1.1 The cost-based approach

Cost-based methods rely on the assumption that the historical cost incurred in creating a patent is, reflected into its value. By evaluating and discounting all the R&D and administrative or legal costs incurred while taking into account the effect of inflation, one may get an approximate value for an IP right.[187]

Another way, using the same method, is assessing the cost of replacing the patent or recreating an equivalent asset and using it as an estimate for the patent's value. Both have several weaknesses, the main one

[185] Goldscheider, *The Negotiation Of Royalties And Other Sources Of Income From Licensing*, p. 1-2
[186] Guellec, Van Pottelsberghe de la Potterie, *The Economics of the European Patent System IP Policy for Innovation and Competition*, p. 108-109
[187] Ibid. p. 107

being the fact that the amount spent on the development is rarely equal to the value of the property. Cost does not equal value, but the underlying value of intellectual property is, founded upon the amount of future economic benefits. One of the drawbacks of the cost approach is that, a mere equal to the cost of capital would severely reduce incentives to invest in the development of new products. It does not take properly into account the dynamic incentives of investment decisions and would not therefore correctly reward the dominant firm for the investments made, in the shape of intellectual effort or ex ante risk. Another drawback of the cost-based access is that many invention result from clever ideas rather than labour or capital intensive activity.[188]

In the light of Microsoft, one can argue that the overall incentive to innovate on the market may take priority over the incentive to innovate for the dominant licensor. The fact that an IPR holder should be compensated for its R&D efforts is clear from case law, but not if and how much he should be compensated as concerns future incomes. This is however contrary to common belief in economic doctrine. As expressed by the Kok report, an inventor or investor has to be compensated for his investment, which the cost-based method does not, as essentially royalties are an expression of underlying contemplated profitability. This leads us to the next basis of calculation, the income based method.

6.1.2 The income approach

The income approaches basic idea is to forecast future income streams of the IP rights use and to discount these annual cash flows over the entire duration of the right. An income-based method requires a valid initial estimate of the net present value of projected cash flows, including costs already incurred,[189] which is not always easily estimated.

6.1.2.1 ECPR method

O'Doughe and Padilla mention The Efficient Component Pricing Rule (ECPR) as one methodology for calculating opportunity cost in supplying new trading parties. This method reflects a compulsory licensing remedy with an objective of, strongly protecting intellectual property and other valuable IP rights and minimising the damage to dynamic economic incentives that compulsory licensing might bring. The ECPR prescribes that, in a competitive market, a firm selling to a competitor the facilities necessary to provide a final service or product that the seller could also provide should demand a price equal to the profits the original firm would have received had it provided the service itself.[190] The result is that, the ECPR price is equal to the opportunity cost to the dominant firm of making a contract with a rival. If there are two firms making a contract with the dominant firm they should each pay half of the dominant firm's expected

[188] O'Doughue, Padilla, *The Law and Economics of Article 82 EC*, p. 727
[189] Guellec, Van Pottelsberghe de la Potterie, *The Economics of the European Patent System IP Policy for Innovation and Competition*, p. 108-109
[190] O'Doughue, Padilla,*The Law and Economics of Article 82 EC*, p. 728

loss in profits when two firms enter the market. The loss is calculated by two aspects, loss in volume of sales and loss in margins due to lower prices, emanating in the following formula:

The sum of the expected loss in profits of the products no longer sold
+ The lower margin on the products that are sold
- Any cost savings to the dominant firm
The terms of license

There are however some drawbacks to the ECPR method:

1, The dominant firm would retain supra-normal profits if it was making such profits at the time a duty to deal was imposed. (refusal to deal cases does not always contain excessive pricing but that is likely to be the case as the dominant company controls an input that is indispensable to competition)

2, ECPR essentially only takes account of the sellers interests, leaving out the willingness of the buyer to pay. At the extreme the reservation price of the dominant seller is higher than the price the buyer is willing to accept, resulting in the parties not reaching a consensus on acceptable price, and the input in question will not be sold.

3, ECPR is further uncertain, as it concerns expected values of prices and costs, which in reality might be different. This is especially so when there is the possibility of more than one firm entering the market.[191]

Based on these weak points, the ECPR methods possible positive effects in cases of compulsory licensing are probably slim. The method has not been used, and probably should not. The fact that it has been used in a number of regulatory decisions is not suitable for parallel, as in the context of regulation the regulator can usually regulate the wholesale and/or retail prices in order to eliminate excess profits.[192]

In the case of the ECPR, it is further clearly to the benefit of the licensor. While the aim of the competition regulation is not to protect the competition, but the consumers, the method supports a Schumpetarian line of thinking, not condoned by the European Commission and Courts. On the opposite, the Microsoft case seems to advocate the opinion that with more competition comes more incentive to innovate.

In Microsoft, the Commission supports a view according to which, a competitive undertaking is better placed to innovate than a monopolist is. The Incentives Balance Test was used by the Commission in order to dismiss Microsoft's claim that the disclosure of interoperability information would have reduced its incentives to innovate. The Commission's reasoning on this point involves at least two logical steps. Following from disclosure of interoperability information there would be more competition in the industry; thanks to more competition, more (and not less) incentives to innovate should be expected. This is still a controversial issue from an economic perspective. A pro-innovation "economics-based" competition policy cannot avoid taking into account that much less certainty and hard facts can be expected at this stage, even from

[191] O'Doughue, Padilla,*The Law and Economics of Article 82 EC,* p. 729-30
[192] Ibid. p.729

the most modern and accurate economic theories and methods, than would be advisable for rational, predictable and effective competition intervention. [193] One source of guidance can be the 25% rule quite often used by in royalty negotiations.

6.1.2.2 The 25% rule

The 25 % is a sort of income-based approach used quite often as a reference point and rule of thumb in licensing situations of a voluntary nature. The rule is particularly useful when the intellectual property constitutes a significant portion of product value and/or the incremental benefits of the intellectual property is otherwise hard to measure.[194] The model has been used primarily in valuing patents, but has been useful in copyright, trademark, trade secret and know-how contexts as well.[195] Basically, an estimate is made of the licensee's expected profits for the product that embodies the intellectual property at issue. Those profits are divided by the expected net sales over that same period to arrive at a profit rate. That resulting profit rate, e.g. 16 %, is then multiplied by 25% to arrive at a running royalty. In this example 4 %.[196]

The underlying theory of this rule of thumb is that the licensor and licensee should share in the profitability of products embodying the patented technology. The licensee receives access to the intellectual property, yet the price it pays still will allow it to generate positive product returns. Because the licensee has undertaken substantial development, operation and commercialization risks, contributed other technology/intellectual property, he should also retain a majority.[197]

The rule has however, been the subject of criticism in several ways, both for being "arbitrary", and for not taking into account specific circumstances that will determine the actual value of the IP right at issue. The latter is based on, the lack of consideration given to the number of value of economic alternatives or the incremental value of using the patented technology over other viable alternatives.[198] In addition, the 25 % rule is accused of, sometimes being indeterminate as to whether it refers to 25 % of net profit or 25 % or gross profit.[199] Gross profit has never been accurately defined where this rule is discussed. However, gross profit based upon a generally accepted accounting principles (GAAP) definition includes the direct costs of production.[200]

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[193] Vezzoso, *The Incentives Balance Test In The Eu Microsoft Case: A Pro-Innovation "Economics-Based" Approach*, European Competition Law Review**,** p. 11

[194] Smith, Parr, *Intellectual Property Valuation, exploitation and infringement damages*, p. 414

[195] Ibid p. 410

[196] Ibid p. 412

[197] Ibid p. 412

[198] Ibid p. 413

[199] Ibid p. 419 According to Goldsheider, Jarosz and Mulhern however, there is no indefiniteness. The rule is based on historical observations of the relationship between *royalty rates* and *operating margins* and is not a split of gross profits. This does take into consideration all of the costs, including non-manufacturing overhead, that are needed to support a product or are driven by the product.

[200] Russel, *Royalty Rate Economics*, p. 4

The rule compares the licensee's expected pre-tax profitability rate from the combined resources of the parties to the expected profitability of a similarly-situated model license.[201] The dependency on industry averages of royalties paid by licensees for similar IP rights is the major shortcoming of the method.[202]

One method that tries to strike a balance between the cost-based and income-based methods is the market approach.

6.1.3 The market approach

Market-based methods value assets by studying the prices of comparable assets, which have been traded between parties at arm's length in an active market. [203] This method is supported by, the fact that courts and authorities are generally not fit to be price regulators, and a price that as much as possible imitates the market is most natural and appropriate. This approach, is also mostly used in setting a fee in excessive prices cases. When constructing a "competitive" price, taken into consideration is several benchmarks in parallel. Optimally the terms on which the dominant firm makes the asset available in analogous competitive markets is used. This method was also used in Rambus. In determining what royalty rates likely would have resulted from *ex ante* SDRAM negotiations, the Commission looked to real-world examples of negotiations involving similar technologies. In this case there was also history between the parties to set a useful benchmark. If there is no present market, past terms serve as a starting point, adjusted where appropriate. Also rivals' terms of access for similar assets in comparable markets, a "competitive" access rate, serve as a relevant benchmark. In the EC case law, this is exemplified in the SACEM case and Tournier cases, where prices in the same product market in other Member States was used as reference points as to what may be an excessive price.

In Microsoft a market price was also sought after. The Commission places the demand that the price cannot reflect the strategic value stemming from Microsoft's power in the client PC operating system market or in the work group server operating systems market, but should reflect the market valuation of comparable technologies.

There is still of course the element of subjectivity in the licenses used as a target. Tim Sampson goes as far as to argue that it is generally accepted, that the percentage rates that are currently applied to IPR licences bear no real relationship to the underlying economic fundamentals of the transaction in question, but that the rate is guided by market norms and irrationality. Even where parties can agree to the terms, they cannot subjectively judge whether the rate applied is proportionate, fair or justified. This makes it all the more difficult for a court or authority to

[201] Goldscheider, *The Negotiation Of Royalties And Other Sources Of Income From Licensing*, p. 3
[202] Guellec, Van Pottelsberghe de la Potterie, *The Economics of the European Patent System IP Policy for Innovation and Competition*, p. 108-109
[203] Ibid. p. 108

replicate that royalty, as is the aim of the market approach. Yet this is the most appealing of the methods illustrated, trying to replicate an arms-length price as far as possible.

There have been efforts to publish standard rates as guidelines to practitioners. Negotiators or so-called "licensing experts" often suggest that standard, industry-specific royalty rates exist and that it is very difficult to depart from them. [204] Others disagree. Goldscheider disapproves of royalty rate standardization, on the grounds that, if industry trends indicate low royalties, they could merely be a reflection of the general level of profitability in that industry. To limit innovation in that industry to an artificially low royalty standard would be inappropriate.[205] The major shortcoming of this method is the uniqueness of patents and hence the difficulty to identify similar patents involved in recent transactions, and whose use represents the best use of the own patent being evaluated. Even if such transactions did exist, information about private transactions, are seldom accessible.[206]

Another shortcoming is that the industry-norms method focuses upon the rates that others are charging for intellectual property licensed within the same industry. Investment risks, net profits, market size, growth potential, and complementary asset requirements are all absent from direct consideration. Changing economic conditions along with changing investment rate of return requirements also are absent from consideration when using industry norms. A royalty established only a few years ago is probably inadequate to reflect the changes in the value of the licensed property and the changes that have occurred in the investment marketplace. Important is therefore to find as similar product, in as similar market and for it to be as recent as possible.

Even so, the methods used above, are not meant to give an exhaustive list of means of calculating royalty. Actually, the most commonly used royalty rate methodologies, according to Russel L. Parr fail to consider: changing economic conditions, rates of return that are available from alternate forms of investments, the amount of complementary assets used along with the intellectual property, the extent of support expenses associated with continued commercialisation; and the distinction between cost and value. [207]

6.1.4 The zero royalty alternative

Another possibility is of course, royalty free licensing. However, that hardly solves the problem at hand and is not always appropriate. A royalty free access may be appropriate where a duty to deal concerns information that is not protected by IP or where a firm has voluntarily licensed other

[204] Goldscheider, *The Negotiation Of Royalties And Other Sources Of Income From Licensing*, p. 10
[205] Ibid
[206]Guellec, Van Pottelsberghe de la Potterie, *The Economics of the European Patent System IP Policy for Innovation and Competition*, p. 108
[207] Parr, *Royalty Rate Economics*, p. 5-6

undertakings for free. In all fairness, even a dominant firm is always entitled to change its licensing policy, but past or present terms of dealing may offer some basis for calculation the terms of new licensees' contracts. This finds support in *Tetra Pak II,* where the CFI held that a royalty-free licence was appropriate where disclosing the relevant specifications that customers and competitors needed to make packing cartons compatible with Tetra Pak's packaging machines did not touch upon Tetra Pak's IP rights.[208]

In the Rambus case, a zero royalty was also discussed. If ex ante negotiations would have led to the JEDEC (the SSO) choosing an alternative technology due to too high a price offered by Rambus, that could have been an option. Enough causal connection was not judged to be present in the case though. Two Commissioners dissented from the majority's decision, and wanted to impose zero royalty rate licensing provisions.[209]

6.2 Conclusions

The fact that different ways of calculating the rate of royalty are available, all in the form standards of a non-binding character, and considering that the amount of money and time spent on research and development for the purpose of creating a new product varies a lot depending on the sector of the industry analysed, all reflect the difficulty in setting a reasonable royalty, even in arms-length negotiations.

Applying some common intellectual property valuation methods, give some guidance. Applying a cost-based method seems a poor choice for many reasons, just as the income approach. Both have several weaknesses as far as balancing the interests of the parties, as well as the incentive to innovate. Should a Schumpeterian attitude be taken, the ECPR method might be advocated, but that is so far not supported by the European Courts. Instead a market approach seems to be the one most favoured in the EC, as well as in the US.

Ways to achieve this marked-based royalty, may for example bee, through benchmarking to historical price or to a price in a neighbouring market, or by appointing an independent expert for the purpose of determining what is a reasonable price.[210] One of the problems in trying to establish a voluntary price for a transfer is that in most cases the goods or services under consideration are not available in the same quantity and quality in unconnected transactions. Therefore, the identifying of an arm's length price necessarily contains a substantial element of subjective judgement. The aim of the categorisation above, is merely to illustrate some underlying considerations for setting a reasonable royalty and complemented by studies of case law and doctrine, highlighting some of the problem areas and assess possibilities.

[208] See also Case COMP/M 2861, *Siemens Dränger,* concerning obligation to disclose interface information without fee,; *Atlas,* OJ 1996 L 239/23 on obligation to discloser interface information not mentioning royalties; and Case COMP/M.1601, *AlliedSignal/Honeywell* where royalties was not mentioned, but an oligation to provide interface information.

[209] See dissenting opinion by Thomas Rosch and Pamela Jones Harbour

[210] Fine, *The EC Competition Law on Technology Licensing*, p.124

7 Final remarks

The concept of compulsory licensing is used to prevent the owner of an intellectual property right from refusing to exploit that right in a country or from being the sole provider of a product, by forcing him to permit competition from other producers,' subject only to their payment of an 'adequate' or 'reasonable' royalty or licence fee.[211] In search of this royalty, it is easy to get lost.

The TRIPS agreement refers to *'adequate'* remuneration, leaving considerable room for interpretation at the national level, stating that it must be determined in each individual case, taking into account the circumstances of the licensee and of the market where it operates, as well as the purpose of the licence.[212]

In the EC, an undertaking may be compelled to license its intellectual property rights to competitors if, it is deemed to abuse its dominant position in violation of Article 82 of the EC Treaty. Such abuse occurs when the threefold test laid down first in Magill and then in IMS Health is satisfied. It is not as of now clear, how the Incentives Balance Test and "convenient facilities" doctrine in Microsoft influence these criteria. Some might say that the "convenient facilities" doctrine in Microsoft sets the bar for compulsory licence dangerously low and may end up hindering innovation. On the other hand, compulsory licensing imposed in order to remedy abuse of a dominant position, can also be seen, as a healthy compromise between intellectual property law and antitrust law, promoting dynamic and allocative efficiency.

The latter might be the case especially in sectors which are new, in the meaning that they develop rapidly and, at the same time, are dominated by a few number of undertakings. This is the situation where market-leading companies hold total control over key intellectual property rights. Otherwise, competition eventually would cease to exist in markets where there are no feasible alternatives available. Such markets are found in the software and the energy sector and are illustrated by the great need for would-be competitors to gain access to infrastructure in the telecommunications market. It is also possible that there will be a diversified application of a compulsory licensing system depending on what market is under scrutiny.[213] IPs nature as unique and not easily compared to other assets or markets makes compulsory licensing cases difficult and whatever approach is used, they most likely require adjustments between commercial policy differences, as well as the difficulties of comparing different markets.[214]

Even though the situations in which compulsory licensing is to be applied is not clear, what is clear however, is that the terms on which

[211] Scott, *Compulsory Licensing Of Intellectual Property In International Transactions,* p. 1
[212] Correa, Yusuf, *Intellectual Property and International Trade, The TRIPS agreement*, p. 215
[213] Louma, *Compulsory licensing of Patents and European Community Law,* p. 67
[214] O'Doughue, Padilla, *The Law and Economics of Article 82 EC,* p. 730

access is provided under the licence must be *reasonable and non-discriminatory, RAND*. Less clear again is what RAND actually means.

The only European case expanding on the RAND concept is the Microsoft case. The Microsoft Pricing Principles focus, in the absence of historical price, on reflecting the market valuation of comparable technologies, and through inserting the "no strategic valuation" criterion alongside the usual language of reasonableness and non-discrimination, the Commission has made some steps towards specifying the access-pricing regime more fully. The Commission implies that Microsoft should not be allowed to set licensing terms, such as to protect the existing monopoly rents from its dominant position in the PC and server software markets.

In setting a fee for the licence, apart from the criterion of reasonableness and non-discrimination, the removal of strategic valuation and consumer benefit may be considered. Still this leaves a company trying to calculate the risks and potential benefits of a future investment in a tricky place. Vagueness regarding the appropriate terms of compulsory licensing is likely to impact on investment decisions. Ex ante decisions on investments are governed by a forward-looking assessment of expected future profits. If the terms of access could vary from zero to any profit-maximising price, it would be very difficult to come up with reliable estimates as to project viability, which at the extreme, might bring down certain valuable investments.

When and why compulsory licensing is applied is relevant when assessing how it should be remunerated. The underlying values of when and why influences the means for setting the price. If Microsoft replaces the “last resort” opinion of the earlier case law with a new microeconomic perspective, weighing in the incentives in the whole market, that should also be taken into consideration in calculating the royalty.

The fact that the case law developing on the concept of RAND is scarce is, according to the author, hardly a reflection on the importance of the meaning of RAND, but most probably, because the cases have still not reached the courts. They are sure to do so in the near future though and the meaning of RAND will surely have a large impact on the attitude towards compulsory licensing and most likely affect innovation.

From looking into the case-law and economic doctrine, as well as intellectual property valuation theory, the conclusion I draw from this investigation is that Courts in the EC as well as in the U.S have used a “but for” or “arms-length” point of reference. These are essentially variations on the same theme falling under the market approach.

As a royalty rate is essentially arbitrary in a freely determined royalty, it is difficult to find a sensible basis for objective comparison in the search for such “arms-length” royalty. This encourages one to cling to the market norms, going rates and benchmarks and shows one of the major problems in trying to establish a price for a transfer, that in most cases the goods or services under consideration are not available in the same quantity and quality in unconnected transactions. Therefore, the identifying of an arm’s length price necessarily contains a substantial element of subjective judgement, and as it stands now, so does RAND terms.

The courts and competition law authorities reluctance to act price regulator is understandable and perhaps should also be encouraged. For the same reasons courts and competition authorities have generally avoided trying to establish a “competitive price” in excessive pricing cases, they will have difficulties setting a price that is RAND. Even specialist regulators with detailed knowledge of industries and extensive information powers have had mixed results in determining “competitive” or “efficient” prices. This is also in line with the fact that, there are major discrepancies within economic theory concerning what best fosters competition and innovation and efficiency.

When nevertheless forced to set terms it is important to understand that there is no single, correct solution. The Courts are probably likely to rely upon the same techniques that they have used in other cases, in which they have set prices or margins, in particular excessive prices and margin squeeze cases, to as large an extent as possible setting a price that resembles an arms-length negotiation between parties. The aim will be setting an access price at which a reasonably efficient firm could make a material contribution to competition on the downstream market.[215]

It will be interesting to see the development, when more cases reach the courts. If a more economics based approach will be continued in the case law, policy on what economic factors are essential, will have to be expanded on. Whichever way the development may take, clarification is due.

[215] O’Doughue, Padilla, *The Law and Economics of Article 82 EC,* p.731

Supplement A

(1) the established royalty rate paid by licensees;
(2) rates paid by licensees for comparable patents;
(3) the nature and scope of the licenses, including exclusivity and territorial extent;
(4) the patentee's policy of refusing to license or imposing conditions on licensees to preserve commercial exclusivity;
(5) the commercial relationship between the patentee and each licensee, such as whether they are competitors or inventor and promoter;
(6) the effect of the patented invention in promoting sales of other items, for both the patentee and licensees;
(7) the remaining life of the patent and the terms of the licenses;
(8) the established profitability of the patented product, its commercial success, and its current popularity;
(9) the advantages of the patented invention over prior art;
(10) the nature of the invention, the character of the embodiment used or produced by the patentee, and the benefits to users;
(11) the extent and value of the infringer's use;
(12) the customary fraction of profits or selling price devoted to royalties for the same or analogous inventions in the same or comparable businesses;
(13) the rightful apportionment of profit among the invention, nonpatented aspects or elements of the product, the manufacturing process, business risks, and the infringer's addition of new features and improvements;
(14) expert testimony; and
(15) the hypothetical 'willing seller- willing buyer' price for a license at the time the infringement began.

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