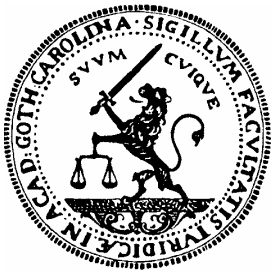

FACULTY OF LAW
University of Lund

Malin Kanevid

Compulsory Licensing of Intellectual Property Rights

With emphasis on The Incentives Balance Test

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Supervisor:
Hans Henrik Lidgard

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Contents

Summary

The general rule in EC law is that a holder of an intellectual property right is not obliged to license the use of that right to others. However, situations exist where intellectual property rights suffer some limitations because of the prevalence of other conflicting interests.

A dominant firm can, as the holder of an intellectual property right, be forced to grant a license to one or more undertakings if it has abused this right and in doing so distort the competition on the relevant market as recognised under Article 82 EC. There is a lack of detailed provisions concerning compulsory licensing in European Competition law. This obligation must therefore be based on case law. The *IMS Health* judgement defines the current view of the ECJ. The Court stated that a refusal to grant a license is abusive if four criteria are at hand, namely that the product must be indispensable for carrying on a particular business, the refusal is preventing the emerge of a new product for which there is a potential consumer demand, that it is unjustified and such as to exclude any competition on a secondary market. However, the Commission changed the legal standard set out by the Court when it introduced the incentives balance test in the *Microsoft* Decision. This new balance test, under which the Commission can order a compulsory license, is suppose to answer if a negative impact of a compulsory licence on dominant firm's incentives to innovate is outweighed by its positive impact on the level of innovation in the industry as a whole.

Although the incentives balance test takes consideration of dynamic efficiencies, and innovation, which is generally perceived to be the largest single factor behind welfare improvement, the test has been highly controversial, both from a legal and an economic perspective. Hence, the purpose of this master thesis is to evaluate whether the incentives balance test, used in *Microsoft* granting a compulsory license, is economically founded, and legally acceptable.

Economic theory does not give a conclusive answer as to whether 'competition drives innovation' or 'innovation is best fostered – and financed – by dominant firms with significant monopoly power'. Whether competition promotes innovation better than concentration depends, among other things, on the nature of the innovative process and the innovative environment, as well as the characteristics of the industry under consideration. The effects of a compulsory license on the incentives to innovation are quite complex. A balancing act is required between short-term allocative ex post benefits and long-term dynamic ex ante efficiencies. Regarding intellectual property rights recent economic theory has started to move away from the traditional perspective of intellectual property rights as mechanisms for innovation. Studies show that strong intellectual property rights may even discourage the innovation process.

The analysis of the incentives balance test shows that it is indeed questionable. Although concentrating on innovation, which is one of the most important factors in the new knowledge-based economy, and furthermore taking appreciation of the function of intellectual property rights, it is complex to apply. This because it requires a case-by-case assessment where different efficiencies should be balanced between each other, a trade-off which economic theory does not give an answer to. The methodology of the test gives it a subjective open-ended nature that results in a loosening of the circumstances when a compulsory license can be ordered and, as a consequence, leads to a considerable degree of legal uncertainty.

Abbreviations

CFI	Court of First Instance
EC	European Community
ECJ	European Court of Justice
ECLR	European Competition Law Review
EFD	Essential Facility Doctrine
EIPR	European Intellectual Property Review
E.L.	Rev. European Law Review
EU	European Union
Ibid.	Ibidem
ICT	Information and Communication Technologies
i.e.	id est
IP	Intellectual Property
IPR	Intellectual Property Right
R&D	Research and Development
TRIPS	Trade Related Aspects of Intellectual Property Rights

1 Introduction

1.1 Background

One of the primary tasks of the European Union is to promote a "high degree of competitiveness and convergence of economic performance (…)."[1] To achieve this goal the Community shall create and establish "a system ensuring that competition in the internal market is not distorted (…)".[2] Consequently competition law plays an important role in European Community Law. It seeks to protect the process of competition, not simply to retain the existence of competitors. It is therefore the aim of competition law to prevent the unfair acquisition of market power by individual undertakings, without becoming over-protective of rivals. However, it is a central controversy in the Community to what extent such policy should intervene in the conduct of business affairs.[3]

With a global economy, and the recognition of the benefits that intellectual property rights bring as competitive tools, the legislation concerning intellectual property rights have gained a significant role. Intellectual property is a comprehensive term used to cover a network of legal rights protecting intangible assets that are often of great economic significance for its owner.[4] The intellectual property laws, which mostly have remained an area with national legislation, grant the innovator a legal monopoly for a limited time.[5] Traditionally the justification for the existence of an intellectual property system has been to encourage and promote investments in innovation, through the rewarding of exclusive rights, which in return will stimulate welfare in society in the long run.[6] Despite this, considerable differences of opinion remains about the appropriate level of protection required. The dilemma is that, in economic terms, the legislators are accepting some degree of deadweight loss in order to preserve incentives for future innovative activity by granting temporary monopoly rights.[7]

Competition law and intellectual property law and the connection between them are a subject that has been discussed by legal and economic scholars since the policies have possible conflicting aims. The tension between the two areas of law arises in the interface of innovation and competition.[8]

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[1] Article 2 EC.
[2] Article 3(1)(g) EC.
[3] Goyder, *EC Competition Law*, p. 14-15.
[4] Prime, *European Intellectual Property Law*, p. 3-4.
[5] Lowe, *Intellectual Property: How Special Is It for the Purposes of Competition Law Enforcement*, p.1.
[6] Venit, *Article 82 EC: Exceptional Circumstances The IP/Antitrust Interface after IMS Health*, p. 1.
[7] Webster, Packer, *Innovation and Intellectual Property System*, p. 47.
[8] Prime, *European Intellectual Property Law*, p. 21.

A specific area where the EC competition rules limits the intellectual property protection is that of compulsory licensing. Under Article 82 EC a dominant firm can as the holder of an intellectual property right be forced to grant a license to one or more undertakings if it has abused this right and in so doing distort has distorted the competition on the relevant market.[9]

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Application of competition rules to cases of refusal to license is a highly disputed and not very well settled field of law. There is a lack of detailed provisions concerning compulsory licensing in European Competition law. Such obligation must therefore be based on case law.[10] There are only few cases regarding compulsory licensing decided by the Commission and the Community Courts, and not much guidance as how to interpret the conditions in which intervention is justified. The *IMS Health* judgement defines the current view of the ECJ. The Court stated that a refusal to grant a license is abusive if *" the refusal is preventing the emerge of a new product for which there is a potential consumer demand, that it is unjustified and such as to exclude any competition on a secondary market*".[11] In a former case, *Microsoft*, decided by the Commission, another criterion to consider was introduced –innovation - through the question: does the refusal to license reduce the incentives to innovate? The Commission thereby proposed an incentives balance test that was supposed to answer if a negative impact of a compulsory licence on dominant firm's incentives to innovate is outweighed by its positive impact on the innovation level of competitors.[12] Innovation is generally perceived to be the largest single factor behind welfare improvement[13], and the question is therefore of great importance.

Although the introduced incentives balance test has the merit to strike at the very heart of the controversial debate at the intersection between competition law and intellectual property law it is also highly controversial, both from a legal and an economic perspective. The lack of clarity is particularly troublesome as it represents a part of the legal framework under which the Commission decision in the *Microsoft* case will be reviewed by the CFI.

1.2 Purpose and Delimitations

The purpose of this master thesis is to evaluate whether the incentives balance test, used in *Microsoft* granting a compulsory license, is economically founded, and legally acceptable.

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[9] Faull, Nikpay, *The EC Law of Competition*, p. 577-578.
[10] Drexl, *Abuse of Dominance in Licensing and Refusal to License: A `More Economic Approach´to Competition by Imitation and to Competition by Substitution*, p. 2.
[11] Case C-418/01, *IMS Health GmbH v. NDC Health GmbH*, judgement of 29 April 2004.
[12] Commission decision in Case COMP/C-3/37.792, *EC Commission v. Microsoft*.
[13] Glader, *Innovation, Economics and the Antitrust Guidelines on Horizontal Co-operation*, p. 516.

While the main purpose is to examine the incentives balance test, an underlying issue is whether the *Microsoft* Decision is consistent with the case law at hand. Throughout the thesis the development within this field of law will be analysed to make a comparison of the Decision with the applicable legal standards in the settled case law possible.

An analysis of the impact a compulsory license may have on dominant market actors incentives to innovate as well as competitors in the industry could concern all aspects of how the innovation process functions. Nevertheless, many issues relevant to the innovation process will not be covered here. The most noticeable excluded areas may be on how sources of innovation, such as business opportunities, synthesis, capabilities, resources, strategies, and inter-organisational linkages, among other things, affect firms incentives to invest in R&D. Focus has instead been at studying, through theories and research material, how different market structures, namely competition and monopoly, or near monopoly, as well as intellectual property rights can foster or hinder innovation. With the incentives balance test as a point of departure, the main area of the study is compulsory licensing. Compulsory licensing is a phenomenon that strikes at the intersection between competition law and intellectual property law, which makes the areas - competition, monopoly and intellectual property rights - of study meaningful.

Concerning the various forms of intellectual property rights, the main focus is copyright.

As indicated above, the thesis is limited in its jurisdictional scope to cover EC competition law under Article 82 of the EC Treaty.

1.3 Method and Materials

To fulfil the purpose of this master thesis I have studied relevant treaties, the case law sprung from the Commission and the Community Courts, as well as legal and economic literature and commentaries. This research method used is characterised as legal dogmatic.

Regarding the selection of relevant case law, I have chosen to limit the research to five of the most prominent cases regarding compulsory licensing, although there are not many cases in this field of law giving guidance on the subject. Interpretation and analysis of these cases have been made in order to give a comprehension of the development within this area.

Indeed, statutes and rulings by the Commission and the Community Courts serve the purpose of displaying the content of the subject at hand. Not to be disregarded are the informal sources of law, such as notices, papers and policy documents; soft-law instruments which will be regarded in the thesis as complementing the hard-law instruments.

Since the subject for the thesis finds an economic response I have also incorporated an economic perspective in which I use economic theories and research studies to analyse the area under discussion. Economics may help to explain underlying problems with a legal rule and divulge the consequences of different legal rules in fulfilling its purpose. Application of economics in competition law does not, however, mean that the principles relating to the rule of law should be disregarded. The legal framework must be predictable and just in order to create legal certainty.[14]

1.4 Outline

In chapter two, the objectives of intellectual property law and competition law are explained, as well as the relationship between them. The role of compulsory licensing is scrutinized as a limitation to intellectual property law, and as a concept striking at the intersection between the two bodies of law.

In chapter three, the conditions for compulsory licensing under Article 82 EC is identified and discussed, primarily through legislative acts and case law. The incentives balance test, used in *Microsoft*, is elaborated on and commentaries on the test are presented.

In chapter four, current economic theories and empirical research studies are presented. The purpose of this section is to learn about how market structures, compulsory licensing, and intellectual property rights affects incentives to innovate. Some competition policy implications from the EU regarding innovation are also represented.

Finally, in chapter five, the analysis of the incentives balance test, from a legal and an economic perspective, is made on the basis of the presented information in the previous chapters. Concluding remarks, in chapter six, ends the thesis.

[14] Case C-233/96 *Denmark v Commission* [1998] ECR I-5759, para. 38; see also Case 98/78 *Racke* [1979] ECR 69, at paragraph 15: "*A fundamental principle in the Community legal order requires that a measure adopted by the public authorities shall not be applicable to those concerned before they have the opportunity to make themselves acquainted with it*." and Case 79/83 *Kloppenberg* [1984] ECR 1075, para. 11: "*In that regard, it is necessary to emphasize, as the court has already done on several occasions, that Community legislation must be unequivocal and its application must be predictable for those who are subject to it*". Another fundamental principle enshrined in EC competition law and the laws of the Member States is the freedom of contract. As Advocate General Jacobs stated in Case C-7/97 *Bronner* [1998] ECR I-7791, para. 56: "*the right to choose one's trading partners and freely to dispose of one's property*" are "*generally recognised principles in the laws of the Member States, in some cases with constitutional status*."

2 Compulsory Licensing in a Context

2.1 The intersection between intellectual property law and competition law

The relationship between intellectual property rights and competition law is often characterized as controversial due to the nature of their objectives. Intellectual property laws have as their objective to regulate the creation, use, exploitation and exclusivity of intellectual property.[15] The IPR protection grants the innovator a legal monopoly, which shields the holder of the right from competition for a limited time, in order to promote investments in R&D, and innovation. From a society-wide point of view the legal system is necessary to ensure the distribution of new knowledge and ideas to the public, information that would not have been chaired without the prevention of free riding.[16] Competition law, on the other hand, is concerned with creating economic efficiency and consumer welfare through effective competition, protection of small and medium sized undertakings, including consumers, and creation of a single European market.[17]

Despite the apparent friction between intellectual property law and competition law, they are viewed in the EU as complementary[18] rather than conflicting, even though they both contain convergent and opposing elements, which render the final balance uncertain.[19] Nonetheless, the purpose, and the overarching goals, of both sets of laws are to enhance consumer welfare, improve economic efficiency and encourage innovation.[20] As a practical matter, the difficulties surrounding the interface of the two sets of law flow not so much from their ultimate objectives, as from the fact that the courts often are called upon to determine when, and why, one body of law should dominate the other in determining the legality

[15] Keeling, *Intellectual Property Rights in EU Law*, p. 2.
[16] Revesz, *Trade-Related Aspects of Intellectual Property Rights*, p. 16.
[17] Goyder, *EC Competition Law*, p. 14-15.
[18] For instance, the European Guidelines on licensing agreements states that " *There is [no] inherent conflict between intellectual property rights and the Community competition rules. Indeed, both bodies of law share the same basic objective of promoting consumer welfare and an efficient allocation of resources. Innovation constitutes an essential and dynamic component of an open and competitive market economy. Intellectual property rights promote dynamic competition by encouraging undertakings to invest in developing new or improved products and processes. So does competition by putting pressure on undertakings to innovate. Therefore, both intellectual property rights and competition are necessary to promote innovation and ensure a competitive exploitation thereof*". Recital 7, Commission Notice 2004/C 101/02 Guidelines on the application of article 81 of the EC Treaty to technology transfer agreements.
[19] Lévéque, *The Application of Essential Facility and Leveraging Doctrines to Intellectual Property in the EU: The Microsoft's Refusal to License on Interoperability*, p. 6.
[20] Rill et al, *The antitrust and IP interface in the US and EU*, p. 87.

of the situation.[21] The source of conflict would therefore lie in the different interests and methods the laws pursue towards the achievement of the common goal.

2.2 Definition of compulsory license

Situations exist where intellectual property rights suffer some limitations given to the prevalence of other conflicting interests. A situation of this kind is compulsory licensing**,** which occur when the holder of an intellectual property right, is forced to grant the State or others with a license concerning its protected goods.[22] A compulsory license is therefore an exception to intellectual property law justified in the light of the overriding interest of competition. The decision to allow a compulsory license is a right that lies with the state authority and that comes with an obligation to adequately compensate the inventor for granting access to the invention. Hence the inventor receives royalties for the involuntary use.[23]

[21] Gutterman, *Innovation and Competition Policy*, p. 12.
[22] Halewood, *Regulating Patent Holders: Local Working Requirements and Compulsory Licensing in International Law*, p. 260.
[23] Penrose, *The Economics of the International Patent System*, p. 162.

3 Compulsory licensing of intellectual property rights under Article 82 EC

3.1 The EC rules on competition

There are mainly two areas of EC law where a conflict with national intellectual property laws can arise. These are the rules concerning the free movement of goods and the competition rules. In these areas where the two legislations, namely the EC law and the Member States laws, are not compatible, Article 30 and Article 295 EC explicitly requires the Community to respect the national systems of property ownership. It was established in the *Grundig Consten* case[24] that the Member States intellectual property rights were a form of property that enjoyed the protection of Article 295. This article hinders both the single market rules and the competition law to be interpreted as to declare nationally granted intellectual property rights invalid. The protection is however limited. To clarify when intellectual property rights can be subject to the free movement provisions and competition rules, the ECJ developed the conceptual distinction between the existence of an intellectual property right that could not be affected by EC law, and the exercise of the intellectual property right, that could.[25]

Competition law imposes obligations where the holder of an intellectual property right has a position of dominance on a relevant market. The situation is complicated by the fact that it may be the intellectual property right itself which leads to the dominant position. The ECJ has, however, established that the mere existence of an intellectual property right does not constitute a dominant position and normal use of such a right is not considered a breach of the competition rules. The intellectual property right must be used in an abusive manner in order to be illegal.[26] Article 81 EC and Article 82 EC are the most pertinent provisions to a determination of the permissible restrictions that can be imposed on an undertaking.

3.2 Development

The competition rules, especially Article 82 EC, have been subject to economic critique over the years. Commentators have noted a lack of consistency in the Commission's and the Court's reasoning in the case law. There have also been discussions about whom Article 82 EC is supposed to protect; the consumers or the competitors.

[24] Joined Cases 56/64 and 58/64 *Consten and Grundig v Commission,* [1966] ECR 299.
[25] Faull, Nikpay, *The EC Law of Competition*, p. 577.
[26] Faull, Nikpay, *The EC Law of Competition*, p. 577-578.

One of the primary objectives of EC competition policy is to promote the Lisbon strategy, namely to make the EU "*the most competitive and dynamic knowledge-based economy in the world*" by the year 2010.[27] Additionally to the above mention critique, the Commission, in order to fulfil the Lisbon goal, decided to review its approach to Article 82 EC. The development of the new economy, characterised by dynamic and innovative markets, has also increased the pressure for a new approach.

In 2005 the Economic Advisory Group for Competition Policy presented a paper[28], which is focused on a more economic-based approach, rather than the former legally-based, to Article 82 EC and the competition policy. It suggests that authorities should focus on the specific circumstances of each case, in contrast to the form-based approach, which in turn builds upon the previously defined practise. The proposal argues that a new approach to the competition policy should be based on rigorous economical analysis, from both a theoretical and an empirical point of view.[29] The Group emphasised this element in the court procedure as "*a natural process [that] would consist of asking the competition authority to first identify a consistent story of competitive harm, identifying the economic theory or theories on which the story is based, as well as the facts which support the theory as opposed to competing theories. Next, the firm should have the opportunity to present its defence, presumably to provide a counter-story indicating that the practice in question is not anti-competitive, but is in fact a legitimate, perhaps even pro-competitive business practice."*[30] Later, in December the same year, a Discussion Paper[31] was presented on the application of Article 82 EC as a step towards the modernisation of the law of abuse.

3.3 Objectives and Scheme of Article 82 EC

Article 82 EC have two different objectives, namely to protect consumers and the economy as a whole, and to protect competitors to a dominant firm which possesses a certain degree of economic strength that makes it less sensitive to the actions of competitors.[32]

The Article describes three circumstances that shall be fulfilled in order for the provision to be applied, namely dominance on the relevant market, abusive behaviour and effect on intra community trade.

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[27] As expressed by former European Commissioner for Competition Policy Mario Monti in a speech at the Center for European Reform in Brussels in October 2004.
[28] Report by the EAGCP *An economic approach to Article 82*.
[29] Etro, *Competition policy: towards a new approach*, p. 1.
[30] EAGCP, *An economic approach to Article 82*, p. 15.
[31] DG Competition Discussion Paper on the Application of Article 82 of the Treaty to exclusionary Abuses.
[32] Korah, *EC Competition Law and Practise*, p. 79.

3.4 The relevant market

The relevant market is defined in the Commissions Notice of the Definition of the Relevant Market for the Purpose of Community Competition Law[33] by identification of a product/service-, geographical- and temporal market.

The Commission has defined the relevant product market as comprising "*all those products and/or services which are regarded as interchangeable or substitutable by the consumer, by reason of the products' characteristics, their prices and their intended use*".[34]

The Commission has identified the relevant geographical market as comprising "*the area in which the undertakings concerned are involved in the supply and demand of products or services, in which the conditions of competition are sufficiently homogenous and which can be distinguished from neighbouring areas because the conditions of competition are appreciable different in those areas*".[35] The geographical market identification requires that the conditions of competition are sufficiently homogenous in order to make an evaluation of the economic strength of the undertaking concerned possible.[36] When determining the relevant market both economic and regulatory factors are taken into account.

The temporal market, which often is seen as a part of the product dimension, takes account of the time dimension.[37] When analyzing market dynamics, and the effect of innovation, the need to define markets temporally is pertinent, in particular in determining the extent to which future products compete with current products, and in distinguishing between current and future markets.

3.5 Dominant position

The legal definition, as expressed by the Commission and the Community Courts, of dominance is described as; *"a position of economic strength enjoyed by an undertaking which enables it to prevent effective competition being maintained on the relevant market by giving it the power to behave to an appreciable extent independently of its competitors, customers and ultimately of its consumers"*[38].

There are a number of indicators to market strength. The most obvious test is the market share.[39] The larger the market share, the more likely it is to find dominance, although a large market share does not by definition

[33] The Commissions Notice of the Definition of the Relevant Market, para. 2.
[34] The Commissions Notice of the Definition of the Relevant Market, para. 7.
[35] The Commissions Notice of the Definition of the Relevant Market, para. 8.
[36] Lane, *EC Competition Law*, p. 144.
[37] Case 6/72 *Continental Can v. Commission*, paras 11 and 44.
[38] Case 27/76 *United Brands v. Commission*, para. 65.
[39] Case 85/76 *Hoffman –La Roche v. Commission*, para. 520.

indicate a dominant position. The Court has established that a market share of 70 to 80 per cent is "*in itself, a clear indication of the existence of a dominant position*".[40] Whether dominance can exist with a smaller market share depends upon several factors such as the respective shares of the undertaking and its competitors, as well as the period of time holding a high market share.[41] In *United Brands* the Court stated that a market share of 40 to 45 per cent did on its own not constitute dominance, but that the strength of the competition was to be assessed.[42]

Although market share is the most straightforward test of dominance, other considerations, such as the size and strength of the undertaking, its financial and distribution resources, its ownership of intellectual property rights, may constitute barriers to market entry.[43] Regarding intellectual property rights technological advantages have been held as indicators of a dominant position. This because such rights in combination with a high market share tends to increase the advance over competitors.[44]

3.6 Abusive conduct and affect on intra community trade

Abusive conduct is a flexible concept and has been given a wide application by the Court. The general principle is that dominance cannot, and should not, deprive the undertaking of the right to compete in the marketplace.[45]

The Court defined abuse of a dominant position, in *Hoffman-La Roche v. Commission*, as "*an objective concept relating to the behaviour of an undertaking in a dominant position which is such as to influence the structure of a market where, as a result of the very presence of the undertaking in question, the degree of competition is weakened and which, through recourse to methods different from those which condition normal competition in products or services on the basis of the transactions of commercial operators, has the effect of hindering the maintenance of the degree of competition still existing in the market or the growth of that competition*."[46]

Abusive conduct can take two different forms; 'exploitative' abuse, which is directly harmful to consumers in the relevant market, and 'exclusionary' abuse, a form that harms the competitive market and hinders competition from other undertakings.[47] Abuse of an intellectual property right is

[40] Case T-30/89 *Hilti v. Commission*, para. 1481.
[41] Case C-62/86 *AKZO Chemie BV v. Commission*.
[42] Case 27/76 *United Brands v. Commission*, para. 65.
[43] Lane, *EC Competition Law*, p. 148.
[44] Decision 88/501 of the Commission *Tetra Pak I*, para. 27.
[45] Lane, *EC Competition Law*, p. 149.
[46] Case 85/76 *Hoffman –La Roche v. Commission*, para. 541.
[47] Lane, *EC Competition Law*, p. 150.

generally considered as exclusionary, the dominant holder of the right exploiting its position while harming the competitive structure.[48]

The concept of abuse is an objective one, which means that the lack of intent from an undertaking cannot deprive it from responsibility. The Commission can, however, take into account subjective elements when imposing the fines.[49]

The EAGCP Report deliberates on exclusionary behaviour, and a discussion is expressed on the difference of abusive behaviour and normal competitive behaviour, which may have exclusionary effects. To distinguish the difference between the two, the EAGCP suggests a case-by-case approach in which every case is individually examined, and alternative explanations to the alleged abusive conduct is investigated.[50]

For Article 82 EC to apply the undertaking's conduct must have an effect on intra community trade. The term 'intra community trade' does not mean that the abusive behaviour cannot be prohibited if it is taking place within a single Member State. It is held that the behaviour can be abusive as long as the conduct is capable of having a sustainable effect on intra community trade.[51] A 'sustainable effect' on trade is defined to take place when the conduct affects the normal pattern of trade or the normal pattern of competitive structure. The effects on trade must not have to be harmful or negative. Nor is it necessary to prove that trade between Member States is in fact affected, it is enough to show that the conduct is capable of having such an effect.[52]

3.7 Refusal to license intellectual property rights

The cases involving compulsory licensing are sprung from the case law of refusal to deal under Article 82 EC. Historically the prohibition of a refusal to deal has been justified by the need to protect short-term competition. This infringe the principle of freedom for all undertakings to deal, a principle which is justified by economic considerations. Ensuring that companies are allowed to use their output as they see fit fosters long-term competition. Indeed, applying Article 82 EC to a refusal to deal will always involve a trade-off between short-term and long-term competition.[53]

Over the past 20 years, the European courts and the Commission have issued a number of judgements and decisions concerning the interface between competition law and intellectual property rights which has led to

[48] Anderman, *EC Competition Law and Intellectual Property Rights*, p. 180-190.
[49] Faull, Nikpay, *The EC Law of Competition*, p. 147.
[50] EAGCP Report, p. 22.
[51] Case 322/81 *Michelin v. Commission*, para. 103.
[52] Faull, Nikpay, *The EC Law of Competition*, p. 96-97.
[53] Faull, Nikpay, *The EC Law of Competition*, p. 152.

the emergence of a discernible picture of the fundamental relationship between the two.[54]

3.7.1 The Volvo v Veng case

The question whether a simple refusal to license could constitute an abuse of a dominant position was first tackled by the ECJ in Volvo v Veng.[55] This case involved Erik Veng Ltd, a UK firm that wanted to import spare parts, for which Volvo had a protected copyright design, from Denmark and Italy and sell them in the UK.

In its judgement the ECJ firmly held that the mere refusal to license intellectual property, even for a reasonable royalty, could not, in itself, constitute an abuse of a dominant position under Article 82 EC. According to the ECJ, the essential characteristics of intellectual property was the right to exclude third parties, and thus, the owner of the intellectual property should be afforded deference in its decision to refuse to license others.[56] The Court went on to state that the exercise of an intellectual property right could, however, constitute an abuse if an additional special factor was present. Three additional factors were given by the Court, namely an arbitrary refusal to supply spare parts to independent repairers, a fixing of prices at an unfair level, and a decision not to produce spare parts for a model still in circulation.[57] The ECJ did not find any of these examples or any other abusive behaviour to be present in this particular case and therefore concluded that Volvo's refusal to license was not abusive.[58]

3.7.1.1 Comments

Although this judgement shed some light over the interface between competition law and intellectual property rights the Court did not give any guidance explaining how the national courts were expected to apply these examples, or if they were expected to be exhaustive or not.

3.7.2 The Magill case

Some years later the Court revisited the possibility of compulsory licensing under Article 82 EC in a case known as Magill[59]. The Court did impose a compulsory license, requiring three TV broadcasters in the UK and Ireland to provide Magill with the copyrighted material it had requested for the publishing of a comprehensive weekly TV guide.

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[54] Badal, Lawrence, *From Magill to Microsoft: Is the European Union's Insistence on Compulsory Licensing of Intellectual Property Rights a Threat to Innovation?*, p. 46.
[55] Case 238/87, *AB Volvo (UK) Ltd. v.Erik Veng (UK) Ltd*. [1988] ECR 6211.
[56] Case 238/87, *Volvo v. Veng*, para. 8.
[57] Case 238/87, *Volvo v. Veng*, para. 9.
[58] Case 238/87, *Volvo v. Veng*, para. 10.
[59] Cases C-241/91 P and C-242/91 P; *Radio Telefits Eireann (RTE) and Independent Televisions Publications Ltd (ITP) v. Commission*. [1995] ECR I-743.

The ECJ started by stating that "*so far a dominant position is concerned, it is to be remembered at the outset that mere ownership of an intellectual property right cannot confer such a position*"[60]. The Court went on explaining, "*it is clear from (the Volvo v Veng) judgment that the exercise of an exclusive right by the proprietor may, in exceptional circumstances, involve abusive conduct*"[61]. The Court then proceeded to describe the exceptional circumstances. First, the Court declared that the product is an *indispensable* input required for the marketing of a *new product*, which the holder of the intellectual property right does not offer, and for which there is a potential consumer demand. Second, the refusal to supply was *not justified*. The third circumstance was the fact that the broadcasters *reserved to themselves the secondary market* of a weekly television guide by excluding all competition on that market.[62]

3.7.2.1 Comments

The circumstances surrounding Magill were somewhat different compared to the circumstances at hand in *Volvo v Veng* as Magill needed the requested license to produce a new product for which there was an identified demand by consumers. The Court held that in such circumstances there might actually be a limited obligation to license.

However, Magill left questions unanswered. The ECJ, as it relied on the 'exceptional circumstances' in *Volvo v Veng*, did not clarify whether the conditions laid out in Magill were either simply examples or necessary cumulative conditions to be fulfilled for a finding of abusive. Neither did it clarify how they should be interpreted.

3.7.3 The Bronner case

The case of Bronner[63] concerned the question whether a small newspaper enterprise, Der Standard, should have access to a nation-wide home-delivery network that had been set up by a larger company, Mediaprint.

The ECJ ruled, in reference to *Magill*, that a refusal to grant access to the delivery services is only abusive if the refusal is likely to eliminate all competition on the part of potential customers in the daily newspaper market. This would occur where the service in itself is indispensable and without actual or potential substitutes for competing in the relevant newspaper market.[64] In its ruling the ECJ stated that the use of Mediaprint's home delivery service was not at all indispensable, because of the fact that several other means of distribution channels, such as shops, kiosks, and post delivery existed. Furthermore, the Court found no technical, legal or

[60] Cases C-241/91 P and C-242/91 P; *RTE and ITP v. Commission*, para. 46.
[61] Cases C-241/91 P and C-242/91 P; *RTE and ITP v. Commission*, para. 50.
[62] Cases C-241/91 P and C-242/91 P; *RTE and ITP v. Commission*, paras 53-57.
[63] Case C-7/97 *Oscar Bronner GmbH & Co. KG v Mediaprint Zeitungs- und Zeitschriftenverlag GmbH & Co. KG*. [1998] ECR 1-7791.
[64] Case C-7/97, *Bronner*, para. 37.

economic obstacles making it impossible for Bronner to establish a home delivery system of its own. This resulted in that the Court concluded that there was never any abusive conduct by Mediaprint and therefore its actions did not infringe Article 82 EC.[65]

3.7.3.1 Comments

The Bronner case did not concern intellectual property rights, but is nevertheless of significance for the interpretation of case law concerning compulsory licensing. The ECJ made clear that each case of abusive behaviour requires a careful examination of the legal and the economic context as well as a balancing act of individual and public interests before a ruling can be made.

As stated above, the ECJ turned in it's ruling to *Magill*, and thereby summarized and interpreted some of the requirements in that case.[66] The *Magill* requirement that the refusal should be "not justified" became "not justified by *objective* considerations" [emphasis added], which is different because it goes to the existence of the considerations rather than the merits. In *Magill* the Court fund an abuse in the fact that the broadcasters had "*reserved to themselves the secondary market of weekly television guides by excluding all competition on that market*", a requirement which in Bronner became a test of "*likely to exclude all competition in the secondary market*" With this an element of probability was introduced to the test.

3.7.4 The IMS Health case

The IMS Health case[67] was an opportunity to clarify the exceptional circumstances that warrant compulsory licensing under Article 82 EC. This case is the latest judgement by the ECJ, and thus the most authoritative pronouncement to date on the interface between Article 82 EC and intellectual property rights. As such, its merits are carefully studied.

The case concerned a complaint filed by NDC Health to the European Commission against its competitor IMS Health for abusing its dominant position by refusing to license copyright to a certain 'brick' structure. This copyrighted "1860 brick structure" – a segmentation of Germany into 1860 geographical areas, designed according to several criteria - was used by IMS for collecting and distributing pharmacy sales data. The copyrighted format was developed in collaboration with those who were to be the recipients of the data. NDC was trying to enter the market as they discovered that customers were reluctant to use anything that was not highly similar to the existing 1860 brick structure. The company began offering a similar competing product, but IMS took action for copyright infringement against NDC. NDC, on the other hand, claimed that IMS's refusal to license the copyrighted brick structure was an abuse of its dominant position. According to the Commission, which ordered IMS to license the

[65] Case C-7/97, *Bronner*, paras 42-47.
[66] Case C-7/97, *Bronner*, para. 40.
[67] C-418/01, *IMS Health GmbH v. NDC Health GmbH* , [2004] CMLR 28.

copyrighted material, the brick structure constituted a de facto "industry standard".[68]

In April 2004 (one month after the Commission issued the *Microsoft* decision, discussed below), the ECJ issued its judgement. After examining the relevant case law, namely *Volvo v Veng* and *Magill*, and reiterating the way the Court in *Bronner* summarised *Magill*, the Court set out the legal standard by defining a four-part test for when a refusal to license is an abuse of Article 82 EC[69]:

(i) The product or service protected by copyright must be *indispensable* for carrying on a particular business.
(ii) The refusal *prevents the emergence of a new product for which there is potential consumer demand*.
(iii) The refusal is *not objectively justified.*
(iv) The refusal is such as to *exclude any competition on the secondary market*.

With this statement the ECJ affirmed the cumulative nature of the *Magill* test, as well as significantly narrowed the approach adopted in *Volvo v Veng*.[70] Furthermore the Court described the three conditions making a refusal of indispensable inputs abusive as "sufficient", and thereby does not indicate that they rule out all other conditions. The ECJ declared that it was for national courts to determine whether the conditions were fulfilled but elaborated, as guidance, on three of them.

On indispensability, the ECJ restated the *Bronner* judgement and confirmed that the legal test involves an investigation of whether there are products or services which constitute alternative solutions, even if they are less advantageous, and whether there are technical, legal or economic obstacles capable of making it impossible or at least unreasonably difficult for a company to operate in the market to create, alone or in cooperation with other operators, the alternative products or services.[71] The Court concluded that there are two highly relevant circumstances creating obstacles to create an alternative product, namely, the high level of customer involvement in the development of the brick structure and the customer dependence on it.

On the criteria "emergence of a new product", the ECJ is clearly stating that duplicating the goods or services already offered by the right holder is not enough to satisfy this criterion. The undertaking must intend to produce new goods or services for where there is a potential unmet consumer demand.[72]

As to the third condition, objective justifications, the Court ruled that no specific observations had been made, and that national courts on a case-by-

[68] Case C-418/01 *IMS Health GmbH v. NDC Health GmbH*, paras 3-12.
[69] Case C-418/01 *IMS Health GmbH v. NDC Health GmbH*, para. 38.
[70] Case C-418/01 *IMS Health GmbH v. NDC Health GmbH*, para. 38.
[71] Case C-418/01 *IMS Health GmbH v. NDC Health GmbH*, para. 28.
[72] Case C-418/01 *IMS Health GmbH v. NDC Health GmbH*, paras 48-49.

case basis must conduct the assessment of such justifications.[73] Commentators have discussed what an objective justification can be when it is not acceptable to just deny access and refer to the protected legal monopoly. Advocate General Jacobs in *Bronner* reviewed US case law and pointed out three categories of objective justification. A company in a dominant position, which controls an essential facility, can justify the refusal to enter a contract on firstly, legitimate technical reasons, secondly, commercial reasons, thirdly on grounds of efficiency.[74]

Finally, as regards to the last criterion 'exclusion of all competition on a secondary market', the ECJ stated that there do not need to be an existing primary market as such, a potential or even a hypothetical market will do. Furthermore, in meeting the test, it is determinative that two different stages of production may be identified and interconnected, namely that the upstream product is indispensable for supply of the downstream product.[75]

3.7.4.1 Comments

The judgment by the European Court of Justice in IMS Health follows the previous settled case law, especially the principles derived from *Volvo v Veng, Bronner* and *Magill*. Killick[76] has stated that the IMS judgement "*clarifies the applicable legal standard for compulsory licensing*", however, there are some statements within the IMS judgement that require further interpretation and clarification. What is clear is that the Court has established a principle saying that the mere refusal to licence is not an abuse (*Volvo v Veng*, *Bronner* and *Magill*), only in exceptional circumstances, identified in *IMS*, will a compulsory licence be ordered. Furthermore, the IMS judgement did not just confirm that the *Magill* conditions were cumulative, but the Court held 'that it is clear from the case law that "it is sufficient" (rather than "it is necessary") to satisfy the three *Magill* criteria in order to show an abusive refusal to license'.[77] With this statement the Court has opened the possibility of other conditions also being sufficient for a finding of abusive behaviour.

Although the ECJ has shown a consistent, but rather cautious, line of reasoning in approaching the 'exceptional circumstances' test, there is especially one criterion that has left questions unanswered, namely the determination of whether a product is new. Commentators have stated that the new product test is a significant limitation to unmeritorious complaints about refusals to licence.[78] Ridyard[79] has claimed that it would be easy to

[73] Case C-418/01 *IMS Health GmbH v. NDC Health GmbH*, para. 51.
[74] See Advocate General's Opinion, *Bronner*, para. 47.
[75] Case C-418/01 *IMS Health GmbH v. NDC Health GmbH*, paras 44-45.
[76] Killick, *IMS and Microsoft Judged in the Cold Light of IMS*, p. 25.
[77] Case C-418/01 *IMS Health GmbH v. NDC Health GmbH*, para. 38.
[78] Forrester, *Regulating Intellectual Property via Competition? Or Regulating Competition via Intellectual Property? Competition and Intellectual Property: Ten Years On, the Debate Still Flourishes*, p. 20.
[79] Ridyard, *Compulsory Access Under EC Competition Law – A new Doctrine of "Convenient Facilities" and the Case for Price Regulation*, p. 670.

overcome the requirement by making a trivial change to a protected product in order to fulfil the novelty condition. Looking back at *Magill* the novelty criterion was fulfilled by the addition of pictures, reviews and commentaries in a comprehensive text. In the *IMS* case, in which the Court does not elaborate on the condition, the focus lies on the intension of the company seeking the license. The question at hand is how serious such intent must be for a company to get access to the dominant company's essential inputs. With this come follow-on questions like what the standard of proof for this test is, how this test should be implemented, and if the intension alone, which explicitly does not result in a new product, is sufficient. Furthermore the condition requires a potential consumer demand, a requirement that demands a subjective approach. Although the new product test leaves a grey zone for interpretation the condition aligns on some respects with innovation policies in the sense that ECJ is unwilling to derogate from an intellectual property right unless there is novelty, i.e. some sort of innovation gain elsewhere.

3.7.5 The Microsoft case

While *IMS* confirms and clarifies the *Magill* test, the Commission's Decision in Microsoft, adopted just a few weeks before the IMS judgement, established a different approach to the legal standard applied in compulsory license cases. One could argue that it is not explicitly a refusal to license case, [80] but it is probably fair to say that it has similar implications. [81]

In 2000 the European Commission started an investigation of Microsoft Corporation after a complaint by Sun Microsystems, one of Microsoft's main competitors in the work group server market, accusing Microsoft of using the Windows and Office suit monopoly to obtain an even further monopoly on the relevant market. Sun complained to the Commission that Microsoft provided inadequate information about interface codes for Sun to equip its server to interoperate smoothly with Microsoft's integrate package of Windows 2000, Office Suite and workgroup server operating system because it refused to disclose how the integration between Windows and Office Suite and its server operating system worked. This refusal had the effect of preventing Sun from developing products and offer services to Windows based users of its non-Microsoft workgroup server. During the investigation, the Commission found that other competitors had allegedly been denied access to interface information by Microsoft, thereby suggesting that Microsoft's refusal to disclose the information was part of a larger pattern of refusing to share intellectual property.[82]

[80] Case COMP/C-3/37.792 *Microsoft*, paras 568-572. The Commission makes an attempt to distinguish the *Microsoft* case from a refusal to license case.
[81] Case COMP/C-3/37.792 *Microsoft*, para. 546: "it cannot be excluded that ordering Microsoft to disclose such specifications and allow such use of them by third parties restricts the exercise of Microsoft's intellectual property rights."
[82] Case COMP/C-3/37.792 *Microsoft*, para. 3.

The Commission adopted its final Decision[83] on 24 March 2004 finding Microsoft Corporation guilty of abuse of a dominant position in the market for client PC operating systems by deliberately restricting interoperability between the Microsoft OS and non-Microsoft work group servers, information considered to be necessary in order for other companies to compete efficiently with Microsoft Corporation.[84]

The remedy imposed by the Commission for the refusal to supply interface information was to require Microsoft to divulge all necessary interface information and thereby allow non-Microsoft workgroup servers to become fully interoperable with Windows-based PCs and servers, but also to update interface information whenever Microsoft released a new version of its software.[85]

The Commission's finding that Microsoft violated Article 82 EC rests on the premise that Microsoft enjoys considerable dominance in the relevant market. The relevant markets were identified as the PC operating systems and the market for workgroup server operating systems.[86] The Commission further narrowed the relevant market by arbitrarily limiting it to server operating systems that are installed on server computers that cost less than $25,000.[87] Using this market definition Microsoft's perceived market share was at least 50 percent of the relevant market, while Sun was perceived to possess a "very low" market share.[88] As regards the geographic dimension, the Commission found that the relevant geographic market was world wide.[89]

After having defined the relevant market, the Commission examined Microsoft's alleged abuse. The Commission found that Microsoft allegedly abused its market power "*by refusing to supply Sun and other (competitors) with the specifications for the protocols used by Windows work group networks and allow these undertakings to implement such specifications for the purpose of developing and distributing interoperable work group server operating system products*".[90] Furthermore the Commission found during its investigation that "*many competitors*" complained that they "*do not obtain sufficient interoperability information from Microsoft and feel that this puts them on a strong disadvantage vis-à-vis Microsoft*".[91]

[83] Case COMP/C-3/37.792 *Microsoft*, C(2004)900 final.
[84] Case COMP/C-3/37.792 *Microsoft*, Article 2(a).
Case COMP/C-3/37.792 *Microsoft*, Article 2(b). A second alleged abuse, tying practices of a media player, was also found. However, this abuse goes outside the purpose of this Master's thesis, and will therefore not be further examined.
[85] Case COMP/C-3/37.792 *Microsoft*, para. 1002.
[86] Case COMP/C-3/37.792 *Microsoft*, paras 324-401.
[87] Case COMP/C-3/37.792 *Microsoft*, para. 489.
[88] Case COMP/C-3/37.792 *Microsoft*, paras 514-562.
[89] Case COMP/C-3/37.792 *Microsoft*, para. 427.
[90] Case COMP/C-3/37.792 *Microsoft*, para. 562.
[91] Case COMP/C-3/37.792 *Microsoft*, para. 573.

In the next step the Commission evaluated Microsoft's conduct under the relevant case law dealing with refusal to supply. The Commission's legal analysis acknowledged that *Volvo v Veng* and *Magill* recognized that a firm's refusal to grant a license to its intellectual property cannot, in itself, constitute an abuse of a dominant position. However, the Commission stated that this principle is not without exceptions, noting that several "exceptional circumstances" in which a refusal to deal may constitute abusive conduct were identified in *Magill*.[92] The Commission ends its analysis of the line of case law[93] with the statement that the previous 'refusal to deal' cases never envisioned that a 'refusal to deal' analysis should be restricted to such limited circumstances. The Commission states: "*On general note, there is no persuasiveness to an approach that would advocate the existence of an exhaustive checklist of exceptional circumstances and would have the Commission disregard a limine other circumstances of exceptional character that may deserve to be taken into account when assessing a refusal to supply*".[94] By this statement the Commission takes the reverse direction from the *Magill* judgement, which attempted to narrowly define 'exceptional circumstances', to a case-by-case approach instead. The Commission does not acknowledge the existence of a single test based on the *Magill* judgement that determines whether a refusal to license intellectual property rights is abusive or not. Having determined this, the Commission examines other cases giving further examples of exceptional circumstances. Finally, the Commission concludes that the applicable legal standard in the *Microsoft* case is:

"*The case law of the European Courts therefore suggests that the Commission must analyze the entirety of the circumstances surrounding a specific instance of a refusal to supply and must take its decision based on the results of such a comprehensive examination.*"[95]

Using this new formulation of the 'exceptional circumstances' test, the Commission applies an 'entirety of the circumstances' test to examine Microsoft's alleged misconduct. In its conclusion the Commission states three exceptional circumstances.[96] Firstly, Microsoft's refusal to supply provides a risk of elimination of competition in the relevant market. Secondly, that the risk is due to the fact that the refused input is indispensable to carry on business in that market. Lastly, that Microsoft's refusal has a negative impact on technical development to the prejudice of consumers in contradiction particularly with Article 82(b) EC. Furthermore the Commission found that Microsoft's conduct was part of a general pattern of conduct[97], and that it involved a 'disruption of previous levels of supply'.[98] The Decision is contradictory to settled case law from the ECJ, in

[92] Case COMP/C-3/37.792 *Microsoft*, paras 550-551, and 557.
[93] The Commission also quotes and addresses *Commercial Solvents*, *Telemarketing* and *Bronner* in its Decision.
[94] Case COMP/C-3/37.792 *Microsoft*, para. 555.
[95] Case COMP/C-3/37.792 *Microsoft*, para. 558.
[96] Case COMP/C-3/37.792 *Microsoft*, para. 712.
[97] Case COMP/C-3/37.792 *Microsoft*, para. 573-577.
[98] Case COMP/C-3/37.792 *Microsoft*, paras 578-584.

a number of respects. Although the Commission underlines that the basic conditions of indispensability, elimination of competition and absence of objective justification are met it does not say much on the passing of the new product test.[99] Additionally, it is questionably if the Commission uses the stages set out in *Magill*, and confirmed in *IMS*, correctly.

On the question of indispensability the Commission assesses the condition by evaluating the level of interoperability that exists in the work group server operating system market. Although the Commission finds that it would be possible to achieve some interoperability without the compulsory licence, it concludes that the degree of interoperability that can be achieved on the basis of Microsoft's current refusal "*is insufficient to enable competitors to viably stay in the market*".[100] In the settled case law, namely the *Bronner* and *IMS* judgement, the test of indispensability does not require that optimal access to the market is granted, but that there exists "*alternative solutions, even if they are less disadvantages*".[101] The Commission admits that alternative solutions can be found, but argues that they are disadvantageous, and thereby recognises that a lower level of interoperability exists, which it applies in Microsoft.

In addition, the Commission's decision does not explicitly address the point of emergence of a new product. The new product test, as set out in *Magill* and restated in *IMS*, notes that "duplicating" products is not sufficient, instead a company that wishes to receive a licence must "*intend to offer new goods or services not offered by the owner of the right and for which there is potential consumer demand*".[102] The Commission does not demonstrate that Sun, if a compulsory license were granted, would have offered a new product or service for which there was an unmet consumer demand. Instead the Commission states that competing producers need the interface information to bring "*innovative work group server operating system features*" to the market and that competitors were being "*discouraged from developing new products*". In this part of the decision, the Commission seems to aim at establishing that Microsoft's behaviour limits technical development and reduces incentives of competitors to innovate. Consequently consumers would be locked into one solution, the Windows domain, which was judged by the Commission to be the de facto standard.[103]

The Commission's approach on the condition of elimination of competition is somewhat different than the settled case law. The test was first established in *Magill*, and then elaborated on in *IMS*, as reserving the market to itself by elimination of *all* competition. In the Microsoft Decision the test becomes a "*risk* of elimination of competition"[104], which indicate that the Microsoft

[99] Case COMP/C-3/37.792 *Microsoft*, para. 554 and footnote 670.
[100] Case COMP/C-3/37.792 *Microsoft*, para. 712.
[101] Case C-418/01 *IMS Health GmbH v. NDC Health GmbH*, para. 28.
[102] Case C-418/01 *IMS Health GmbH v. NDC Health GmbH*, para. 49.
[103] Case COMP/C-3/37.792 *Microsoft*, paras 694-695.
[104] Case COMP/C-3/37.792 *Microsoft*, para. 589.

decision uses a lower test than the one proposed in *Magill* and confirmed by *IMS*.

The most noticeable dissimilarity to previous case law is the Commission's approach to Microsoft's objective justification, and intellectual property rights. Microsoft had argued that: *"The objective justification for Microsoft's refusal to disclose its intellectual property rights is self-evident: those are meant to protect the outcome of billions of dollars of R&D investments in software features, functions and technologies. This is the essence of intellectual property right protection. Disclosure would negate that protection and eliminate future incentives to invest in the creation of more intellectual property."*[105]

Regarding intellectual property rights and innovation the Commission first made the general statement that: *"The central function of intellectual property rights is to protect the moral rights in a right-holder's work and ensure a reward for the creative effort. But it is also an essential objective of intellectual property law that creativity should be stimulated for the general public good. A refusal by an undertaking to grant a licence may, under exceptional circumstances, be contrary to the general public good by constituting an abuse of a dominant position with harmful effects on innovation and on consumers."*[106] Hereinafter the Commission finds that *"Microsoft's refusal cannot be objectively justified merely by the fact that it constitutes a refusal to license intellectual property."*[107] The Commission then applies a newly framed incentives trade-off test, in order to dismiss Microsoft's claim of objective justification.

3.7.5.1 The Incentives Balance Test

The balancing test is initially described by the Commission as balancing Microsoft's incentives to innovate against the exceptional circumstances found in the case: *"It is therefore necessary to assess whether Microsoft's arguments regarding its incentives to innovate outweigh these exceptional circumstances."*[108] However, the Commission elaborates on this new balance test under which a compulsory license can be ordered, and concludes that if, on balance, the possible negative impact of an order to supply on Microsoft's incentives to innovate is outweighed by its positive impact on the level of innovation in the whole industry a compulsory licence is in order.[109]

The incentives balance test therefore requires that two balancing exercises shall be undertaken in two separate steps. First the negative impact of a compulsory license on Microsoft's incentives to innovate must be assessed.

[105] Case COMP/C-3/37.792 *Microsoft*, para. 709.
[106] Case COMP/C-3/37.792 *Microsoft*, para. 711.
[107] Case COMP/C-3/37.792 *Microsoft*, para. 712.
[108] Case COMP/C-3/37.792 *Microsoft*, para. 712.
[109] Case COMP/C-3/37.792 *Microsoft*, para. 783.

Secondly the possible negative effect must be outweighed by the positive impact of the order to license on the entire industry.

Regarding the first step the Commission states that Microsoft's incentives to innovate should be assessed "*in comparison to the alternative situation where Microsoft's anti-competitive behaviour remains unfettered*".[110] The Commission hereinafter makes its analysis and concludes that there would be "*a serious risk that Microsoft will succeed in eliminating all effective competition in the work group server operating system*" and that this would result in "*a significant negative effect on its incentives to innovate as regards its client PC and work group server operating system products*".[111] The Commission hereby compares a situation where competition is eliminated in the downstream market with a situation where the obligation to disclose is sustained, and draws the conclusion that incentives to innovate are more likely to vanish in the former case than in the latter. With a compulsory license Microsoft's work group server operating system is compelled to compete with products fully interoperable with Windows domain architecture. Under these circumstances Microsoft would no longer have anything to gain from forcing consumers to choose a homogeneous Microsoft solution, and this competitive pressure would lead to an increase in Microsoft's own incentives to innovate.[112] According to the Commission "*Microsoft's research and development effort are indeed spurred by he innovative steps its competitors take in the work group server operating system market. Were such competitors to disappear, this would diminish Microsoft's incentives to innovate.*"[113]

Additionally, Microsoft is likely to feel more competitive pressure on the upstream market as a result of the increased competition in the downstream market.[114] The Commission also addresses the situation where Microsoft in advance had anticipated the disclosure order, and concludes that this would not have compelled Microsoft to invest less in trying to achieve the best possible interoperability between its client and server software as "*the value of Microsoft's client PC operating system in the eyes of the customer (and their willingness to pay) increases through the availability of complementary interoperable work group server operating systems"*.[115]

Consequently, the Commission draws the conclusion that Microsoft's incentives to innovate would be strongly reduced if Microsoft were allowed to continue refusing to license the interoperability information to its competitors.

No empirical or economic evidence is to be found cited in the Decision in support of the balance proposition. The underlying premise that a

[110] Case COMP/C-3/37.792 *Microsoft*, para. 724.
[111] Case COMP/C-3/37.792 *Microsoft*, para. 725.
[112] Vezzoso, *The Incentives Balance Test in the EU Microsoft Case*, p. 385.
[113] Case COMP/C-3/37.792 *Microsoft*, para. 725.
[114] Vezzoso, *The Incentives Balance Test in the EU Microsoft Case*, p. 385.
[115] Case COMP/C-3/37.792 *Microsoft*, paras 726-727.

compulsory license will restore competition in the relevant software computer market is never questioned. Furthermore the Commission draws the conclusion, without any economic or other analysis, that forcing Microsoft to share its intellectual property with others will have a *"positive impact on the level of innovation of the whole industry (including Microsoft)"*.[116]

3.7.5.2 Comments on the Incentives Balance Test

Although the incentives balance test in the Microsoft decision has been criticised and commented on, the commentators do not seem to analyse and elaborate at length on the issue at hand.

Geradin[117] states that "*Balancing tests are an inherently unreliable and unpredictable method to address mandatory access cases*." The author also comments on the process of balancing ex ante versus ex post efficiencies, which according to him is something that even the most sophisticated economists may find daunting. Regardless of the relatively negative approach to the Commission's incentives balance test, Geradin points out that tests of these kinds are not entirely valueless. Instead balancing tests should play a "marginal" role, that is they should aim to verify whether the costs of granting access in terms of reduced ex ante efficiency do not clearly outweigh the ex post benefits of giving access.

Killick[118] also addresses the issue of legal uncertainty but in the sense that the balancing test is almost impossible for any firm to apply ex ante. Furthermore, Killick notes that the Commission have not given any guidance on how a company is to assess whether its incentives to innovate outweigh the positive impact that a compulsory license would have on the relevant market. He concludes that even the most creative economists would struggle to come up with any sensible method of balancing incentives for innovation. Killick also states that intellectual property rights already involve a short- and long-term balancing of incentives to innovate, and that the test therefore is wrong as a matter of principle. Intellectual property rights are characterized by the trade-off between the short –term disadvantage of exclusivity and the long-term advantage of creativity. According to Killick the Commission does not take this balancing exercise seriously when stating: "*The central function of intellectual property rights is to protect the moral rights in a right-holder's work and ensure a reward for the creative effort. But it is also an essential objective of intellectual property law that creativity should be stimulated for the general public good. A refusal by an undertaking to grant a licence may, under exceptional circumstances, be contrary to the general public good by constituting an abuse of a dominant position with harmful effects on innovation and on*

[116] Case COMP/C-3/37.792 *Microsoft*, para. 783.
[117] Geradin, *Limiting the scope of Article 82: What can the EU learn from the U.S. Supreme Court's Judgement in Trinko in the wake of Microsoft, IMS, and Deutsche Telekom?*, p. 1542-1543.
[118] Killick, *IMS and Microsoft Judged in the Cold Light of IMS*, p. 44.

consumers."[119] Killick refers to the statement by the Commission that "the general public good" should be allowed to override intellectual property rights as a further evidence of the legal uncertainty in the decision, noting that to evaluate if something may be opposite to the "general public good" is even more difficult than balancing incentives to innovate.

Professor Lévêque[120] does, contrary to the other commentators, a comprehensive analysis, from an economic point of view, of the new product condition as endorsed by the ECJ in *Magill* and *IMS* and the incentives balance test as proposed by the Commission in *Microsoft*. Lévêque states that the new product test is difficult to apply because of the fact that newness is a continuous rather discrete variable. There is not any economic or legal definition of newness that actually helps to establish if the refusal to license harms consumers.

The new product condition is supposed to be a test to show whether the firm intends to produce new goods not offered by the owner of the right and for which there is a potential consumer demand.[121] Focus lies on the value lost by consumers for an improved product not being on the market. The value lost consists of the different characteristics of the product that will enter the market, not the *number* [emphasis added] of different characteristics. In economic terms what is important is not whether some consumers would like the improvement being made but what their willingness to pay for it is, and whether it outweighs the costs of improvement. Because the reaction and the demand of consumers cannot be tested in presence of the product this new product condition covers the initial stages of the innovation process wherever the market for improvement is uncertain. Consequently, besides being difficult to apply, the test is a bad method to evaluate what the Court seeks to test, namely the loss for consumers if the improvement of the product is blocked owing to the refusal to license.

Lévêque also makes a comparative analysis of the incentives balance test, and concludes that this test is much more relevant than the former in two aspects. Firstly, an incentive to innovate is a good method for evaluating consumers' benefits. According to economic theory wherever incentives are present companies will innovate to propose valuable improvements to consumers. Because companies seek to maximize profit they will invest in R&D if they see an opportunity to earn money. As a consequence, the difficult and ambivalent demonstration of intent to innovate is no longer required. Furthermore, firms have a better knowledge than courts have about which new products that are valuable for consumers. Firms are therefore unwilling to introduce different characteristics into an existing product without being sure that consumers will pay for it. Secondly, the incentives approach is adequate to explain economic theory on intellectual property rights. The economic view has historically been that the rationale of

[119] Case COMP/C-3/37.792 *Microsoft*, para. 711.
[120] Lévêque, *Innovation, Leveraging and Essential Facilities: Interoperability Licensing in the EU Microsoft Case*, p. 75-80.
[121] Case C-418/01 *IMS Health GmbH v. NDC Health GmbH*, para. 49.

intellectual property rights is to provide incentives to innovate, and overcome the free-riding problem. This perspective has, however, been altered over the past years as economists have shown that intellectual property rights may sometimes also hinder innovation. The incentives balance test takes appreciation of this fact, something the new product test of balance does not.

The CFI has also given a brief comment on the incentives balance test in its interim decision by stating "the Commission applied an *imprecise* [emphasis added] test which represented a marked departure from those recognised in previous case-law", and furthermore refers to the *fluid nature* [emphasis added] of the new test.[122]

3.7.5.3 Objective Justification

The subject at hand, objective justification, is a condition in the IP context that the European Courts to this date have not elaborated on the meaning of. It therefore remains something of a black hole.[123] Although hardly any case has gone by the European Courts dealing with Article 82 EC that has not made some mention of 'objective justification', not a single instance has especially applied this defence in favour of a dominant undertaking alleged to have infringed the provision.[124] Indeed, former case law seems to have a strict approach to objective justification.

The range of acceptable justifications for a refusal to deal will vary from case to case depending on the facts. In principle, however, a number of defences should be valid. Director General Lowe of DG Competition stated, at the 30th Annual Conference on International Antitrust Law and Policy, that according to the European case law three types of "objective justification" can be identified.[125] First, the dominant undertaking could argue that its conduct was legitimate business behaviour, a justification that embodies two of the objectives Article 82 EC seeks to achieve, namely the protection of consumer welfare and the protection of competitive process. Second, it could claim that its behaviour served a legitimate public interest. This is an objective that neither the Commission nor the Court seem willing to honour. Third, it could argue that, on balance, its conduct produced efficiency gains that outweighed its alleged anti-competitive effects. The efficiency defence has not yet been recognised by the Commission and the Courts.

In IP cases, one could argue that a dominant firm should have a defence if it intends to bring the "new product" to the market itself. This would be in line

[122] See the Order of the President of the Court of First Instance in Case T-201/04 R, *Microsoft Corporation v Commission*, para. 106.
[123] Venit, *Article 82 EC: Exceptional Circumstances The IP/Antitrust Interface after IMS Health*, p. 11.
[124] Loewenthal, *The Defence of "Objective Justification" in the Application of Article 82 EC*, p. 456.
[125] Lowe, *DG Competition's Review of the Policy on Abuse of Dominance*, p. 170.

with the justification for a compulsory license, i.e. that consumers would benefit from a new product that did not exist previously. One limitation to this approach regards the fact that the dominant firm must have some reasonable plan in place to develop the "new product" itself at the time, or in the near future, when the licence request is made. If not, the scenario can be further complicated if the dominant company argues ex post that its intension was to make the same innovation as the requesting party.

Another possible objective justification for refusal to deal could constitute of the fact that the requested input is the result of significant research and development. This issue has been raised in Microsoft's appeal against the Commission's decision ordering it to disclose interoperability information to competitors. The President of CFI stated, at the interim measures stage, that he considered this ground at least arguable in principle, noting that, unlike the intellectual property rights in *Magill* and *IMS*, Microsoft's intellectual property "*relates to secret and valuable technology*".[126]

A number of problematic issues can be outlined regarding objective justification. Firstly, as noted above, there is a lack of case law in which objective justification has been accepted. The reason for this can be that the defences put forward by the companies in the cases were not strong enough, but there is also a possibility that there is something of a disconnection between the theory and practice on objective justification. Consequently, if the latter is true, a defence that is recognised in theory, but not in practice, is basically the same as no defence. Secondly, neither the Commission nor the Community Courts have elaborated on the various stages in their analysis of objective justification. As such the defence is usually rejected with limited analysis and does not explain what framework is applied .[127]

[126] See the Order of the President of the Court of First Instance in Case T-201/04 R, *Microsoft Corporation v Commission*, para. 106.
[127] Temple Lang, O'Donoghue, *The Concept of an Exclusionary Abuse under Article 82 EC*, p. 62-63.

4 Law and economics

4.1 The economic goal

The European Competition law has an underlying aim of welfare enhancement, which can be seen in the objectives declared in the EC Treaty. These objectives take account of "*sustainable and non-inflationary growth, a high degree of competitiveness*" and "*the raising of the standard of living and quality of life*", to be achieved through "*an open market economy with free competition, favouring an efficient allocation of resources*".[128] The Commissioner for Competition Policy, Mario Monti, summarized the Treaty objective at a speech as acknowledging "*the fundamental role of the market and of competition in guaranteeing consumer welfare, in encouraging the optimal allocation of resources, and in granting to economic agents the appropriate incentives to pursue productive efficiency, quality, and innovation"*.[129] This implies that the role of competition policy is to monitor the markets, so that society can benefit from their potential to create wealth. As such, when intervening in competition execution, the goal should be to achieve an increase in efficiency and competition on the market.[130] Consequently this raises the question of what is behind wealth and efficiency.

4.2 Welfare and innovation

The generally accepted perception is that innovation is perceived to be the largest single factor behind welfare improvements. The exact contribution to society from innovation is, however, difficult to assess and quantify due to various imperfections in the many empirical studies. It can, however, be concluded, when analysing the sources of social growth that there are indications pointing to the increased importance of innovation and technological change in economic performance: Investments in innovation has ruse increasingly the last decades. The innovation process has been spread across sectors. Furthermore, there has been a surge in the number of filed patents witnessed by both American and European Patent Authorities. The conclusion drawn from these observations is that innovation is at the core of economic activity.[131] In research-intensive industries, such as the pharmaceutical sector, firms report that in their point of view competitiveness is synonym with innovativeness. A large investment in

[128] Article 2, 4 and 98 EC.
[129] Monti, *European Competition Policy for the 21st Century.*
[130] Glader, *Innovation Economics and the Antitrust Guidelines on Horizontal Co-operation*, p. 515.
[131] OECD, *A New Economy?: The Changing Role of Innovation and Information in Growth*, p. 27-32.

R&D is the key for companies to stay ahead of competitors in order to survive in a worldwide competition market.[132]

Many definitions of the term innovation exist. The Latin origin word "innovare" can be translated to "make something new".[133] Early models of the innovation process describe innovation as a linear sequence of functional activities focused on technology and market conditions. Today innovation is seen as a continuous process, not a single event, with complex relations to which it correspond.[134]

Schumpeter was one of the first thinkers to emphasise the role of innovation as being central to firms' productivity growth, as he wrote the words: *"Innovation is the outstanding fact in the economic history of capitalist society or in what is purely economic in that history, and also it is largely responsible for what we would at first sight attribute to other factors".*[135] Although this was expressed over sixty-five years ago, his words are as relevant to firms now as they were then. The benefits to society arising from innovation are universally appreciated. Nevertheless, uncertainty exists over which market structures provide the most supportive environment for innovation, technological progress, and welfare. The theoretical debate focuses on the polar opposite market structures - monopoly and perfect, or near perfect, competition.

4.3 What fosters innovation?

4.3.1 The model of perfect competition

When discussing market structures and economic efficiency the model of perfect competition is a necessary part. The market equilibrium in this microeconomic model is considered the ideal market state, since it is the most efficient state. In equilibrium, resources are allocated and used optimally in a static sense so that all gains of trade are exhausted by use of the market forces, and therefore equals price marginal cost. Furthermore the market is dominated by production efficiency, which means that all producers make use of existing technologies in an efficient way in order to make profit. This Pareto-optimal equilibrium can only be reached in a market with perfect competition, that is, in a market where there are many independent actors, the quantity of products being bought and sold is small relative to the total quantity on the market, there is a large supply of substitutable products, transactions costs are low, all buyers and suppliers have perfect information and there is a complete freedom of entry and exit

[132] Glader, *Innovation Economics and the Antitrust Guidelines on Horizontal Co-operation*, p. 521.
[133] Tidd, Bessant, Pavitt, *Managing Innovation – Integrating technological, market and organizational change*, p. 38.
[134] Tidd, Bessant, Pavitt, *Managing Innovation – Integrating technological, market and organizational change*, p. 50.
[135] Schumpeter, *Business Cycles: A Theoretical, Historical and Statistical Analysis of the Capitalist Process*, p. 86.

the market. These conditions must be fulfilled so that neither the buyer, nor the supplier, can influence the market price and output by his or her own behaviour.[136]

The main problem with this microeconomic theory is that the model is built on simplifications and conditions, which are usually not at hand or fully achievable in the real world.[137] Because of this, market failures, that is, things that prevent the market to reach the state of equilibrium do occur. One of these is monopoly, in which an undertaking creates efficiency losses, i.e. deadweight loss, for society by not producing in a competitive manner, and setting prices above marginal cost.[138]

4.3.2 Static and dynamic efficiency

In earlier years the main tool for competing was the price of the product. Today, there has been an important shift, away from mere price competition to an emphasis on innovation.[139] The explanation to this shift in market character is that technological innovation together with an increased ability of the labour force are seen as the main driving forces behind productivity gains.[140] The static model, which built on given technologies, homogenous products and price as the number one means of competition, has been replaced by a new state of market efficiency - dynamic efficiency.[141] This efficiency takes into account innovation incentives and developments over time while making a welfare analysis. Contrary to the static efficiency, a formalised market model for achieving dynamic efficiency, i.e. innovation, does not yet exist.[142]

The trade-off between static and dynamic efficiency, representing short-term and long-term consumer interests, is central for the purposes of antitrust analysis, with regard to compulsory licensing. This issue puts focus on the difference between an ex-ante[143] and an ex-post[144] analysis. Analysing ex-post, price competition, generating static efficiency, after the investment in innovation has been undertaken, would benefit consumers,

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[136] Gellhorn, Kovacic, *Antitrust Law and Economics in a nutshell*, p. 52.
[137] Cooter, Ulen, *Law and Economics*, p. 43.
[138] Gellhorn, Kovacic, *Antitrust Law and Economics - In a nutshell*, p. 65.
[139] Glader, *Innovation Economics and the Antitrust Guidelines on Horizontal Co-operation*, p. 522.
[140] Peeperkorn, *IP Licenses and Competition Rules: Striking the Right Balance*, p. 532.
[141] Scherer, which has conducted one of the most exhausted surveys of the effect of antitrust and competition laws on economic efficiency, has distinguished a third type of efficiency; productive. This efficiency is primarily concerned with whether or not the available resources of the producers, and the economy as a whole, are being efficiently applied in the production and distribution of a given good. Scherer, *"Antitrust, Efficiency, and Progress*, p. 33.
[142] Glader, *Innovation Markets and Competition Analysis – EU competition law and US antitrust law*, p. 34.
[143] An analysis ex ante is made from the time when the decision to invest or create was made. Korah, *An Introductory Guide to EC Competition Law and Practice*, p. 257.
[144] An analysis ex post is made after an investment has been made in innovation. Korah, *An Introductory Guide to EC Competition Law and Practice*, p. 257.

although an analysis ex-ante requires that incentives to make the necessary investment in the first place exists. Generally, as seen in the objectives of intellectual property law, innovative activity is undertaken with the prospect of future market power to charge prices that reward the risks and investments incurred, often long-term, in innovation.[145]

Concerning static allocative efficiency, which is a function of a relative allocation of benefits between producers and consumers, usually related to price, there is an agreement in the literature that competition is the main driving force. In economic terms, perfectly competitive markets maximize consumer welfare by promoting allocative efficiency which forces companies in a market with a given technology to produce the goods consumers want in the quantities valued by society at the lowest possible price.

On the other hand there is a general disagreement in the literature about the benefit of competition for innovation and hence dynamic efficiency.[146] Dynamic efficiency, generated by investment incentives, is recognised to be more important to the economy and social wealth in the long run, and is considered to outweigh any static efficiencies. Innovation efficiency is however the least measurable, even ex post. This is due to the necessity of comparison and estimation of actual and hypothetical situations with regard to uncertain innovation, a process that is required in each particular case.[147]

4.3.3 Market structures and Innovation

4.3.3.1 Monopoly

Joseph Schumpeter was among the first twentieth-century economists to recognize the linkage between monopoly power and disproportionately large investments in innovation. Schumpeter was of the opinion that there are stronger incentives for monopolists to innovate, which could produce rapid technological progress, compared to competitive firms, because monopoly firms can capture gains without being imitated by rivals.[148]

The argument put forward is twofold. Firstly, the prospect of future monopoly profits is necessary to encourage ex ante innovation and investment to create that monopoly power. Secondly, the existing market power fosters more innovation and investment ex post, meaning after the creation of the market power, since greater market power means the firm that innovates and invests will obtain more of the profit.[149] The followers of the Schumpeterian view claim that monopoly profits may fund R&D and a high market share may help to appropriate the value of the resulting

[145] Glader, *Innovation Markets and Competition Analysis – EU competition law and US antitrust law*, p. 23-24.
[146] Peeperkorn, *IP Licenses and Competition Rules: Striking the Right Balance*, p. 532.
[147] Glader, *Innovation Markets and Competition Analysis – EU competition law and US antitrust law*, p. 23.
[148] Menell, *Intellectual property: general theories*, p. 135.
[149] Schumpeter, *Capitalism, Socialism and Democrazy*, p. 84-92, 99-106.

innovations. With these arguments they draw the conclusion that there is a conceptual flaw in competition policy. The reason for this standpoint is that competition policy, by attacking monopoly power and thereby preventing market power to arise, may have a positive impact on static allocative efficiency but undermines dynamic efficiency. Since the latter is more important for welfare by spurring innovation it is argued that competition policy has a tendency to lead to unwanted policy results, that is to say less technological progress and less welfare.[150]

Indeed, monopolists have the means to innovate efficiently as they have large economies of scale owing to diminishing unit costs together with the capability to charge prices well over marginal cost, which make the potential profits enormous. A study by Blundell et al[151] shows that monopolies re-invest these profits into R&D to stimulate innovation. Segerstrom[152] talks about "Intel Economics" referring to high investments in R&D by technological leaders of high tech sectors. By the year of 2000 Microsoft invested 16.4% of its total sales in R&D. Due to the fact that monopolists often have a comprehensively understanding of the market in which they are active in, they are capable of making more precise innovative decisions.

Empirical research has shown that monopolists usually try to innovate rapidly to retain their market share and high profits when barriers to entry the market are low. A study conducted by Etro[153] demonstrates that in a market where entry is endogenous but a firm has leadership, the firm will always like to undertake investments and act more aggressively than any firm in a competitive market. This because the monopolist's need to maintain market power, and thus earn monopoly profits, is greater than competitive firms need to outperform its rivals. The process can consequently lead to smaller firms not even trying to enter the monopolist market, as it is perceived to be too competitive.

However, a monopolist can be disciplined by the threat of potential competition from rivals. According to the contestable-market theory a current monopoly firm is not able to abuse its dominant position, since entry could occur if the firm does not use its resources efficiently.[154]

Etro[155] has successfully argued for monopoly as the main driving force for innovation, since he views their investments in R&D as beneficial to society as they advance new technologies. Hausman[156] has earlier claimed that the price discrimination actions taken by monopolists may not always be at the

[150] Peeperkorn, *IP Licenses and Competition Rules: Striking the Right Balance*, p. 532.
[151] Blundell et al, *Market share, market value, and innovation in a panel of British manufacturing firms*, p. 529.
[152] Etro, *Innovation and Patents for the software industry: An empirical analysis for the EU and US cases*, p. 7.
[153] Etro, *Aggressive Leaders*, p. 146-154.
[154] Bergman, *Potential Competition: Theory, empirical evidence and legal practice*, p. 11.
[155] Etro, *Innovation by Leaders*, p. 281-303.
[156] Hausman, *Price Discrimination and Patent Policy*, p. 253-261.

expense of consumers, but can actually raise social welfare. This since welfare gains occur because price discrimination allows patent holders to open new markets and to achieve economies of scale or learning, and thereby they increase the net social welfare.

4.3.3.2 Competition

The Schumpeterian perspective has been contested by Arrow, among other economists[157], which offers economic models indicating that a firm that is already a monopolist has less incentives to invest in cost-reducing innovation.[158] The logic behind the complex math is that because a monopolist by definition begins with lower output than a competitive market, any reduction in per-unit cost the monopolist earns from innovation must be multiplied by a smaller output to get the total gain. Furthermore, a monopolist gains less than a competitive firm from innovation because of the fact that any monopolist profits that result from the innovation in part replaces monopoly profits it was already earning, something Arrow called the "replacement effect".[159] Arrow has also argued that when there is competition to innovate, monopolists innovate at a slower rate than competitive firms.

The Arrow followers have introduced several reasons why competition may provide more incentives for innovation than monopoly. A firm playing in a competitive market will be less complacent because of the competitive pressure and will also have more market share to gain through innovation. Moreover the product invention will not cannibalise the firm's own market as in the case of monopoly.[160]

Reksulak et al[161] has argued against monopoly as the market structure that best capitalizes innovation in the consumers' interest. The argument put forward is that innovation raises the opportunity cost of monopoly; as a firm enjoying market power becomes more efficient, greater amounts of surplus are sacrificed by consumers because of the progressive monopolist's failure to produce the new, larger competitive output. On the other hand, innovation increases the social value of competition by raising the deadweight cost of monopoly.

Scherer has reviewed a large number of empirical research studies that have been conducted regarding the Schumpeterian postulates, and concluded a variety of flaws in Schumpeter's arguments. One finding is that market structure may be less important than demand and supply conditions as determinants of the level of profit-orientated innovative activity. On the

[157] Survey research by Levin et al. and Cohen et al. points to a much more complicated relationship between market structure and innovation than suggested by Schumpeter. Statistical evidence of Schumpeter's hypothesis has shown to be fragile.
[158] Arrow, *Economic Welfare and the Allocation of Resources to Invention*, p. 144.
[159] Elhauge, *Defining Better Monopolization Standards*, p. 298.
[160] Peeperkorn, *IP Licenses and Competition Rules: Striking the Right Balance*, p. 533.
[161] Reksulak et al, *Innovation and the Opportunity Cost of Monopoly*.

demand side, the rate of innovative activity will increase in relation to the anticipated future benefits, regardless of monopolistic or competitive conditions. Competition is seen as stimulating innovation, although when competition becomes so forceful that any given competitor can anticipate very modest benefits from the innovation, more competition retards innovation.[162] On the supply side, competition appears to be advantageous in industries with a knowledge base that advances rapidly, while if the knowledge base advances fairly slowly, concentrated markets are likely to innovate more.[163] Furthermore, Scherer finds no evidence that large dominant firms are more progressive than medium-sized firms investing in R&D, making the relationship between size and innovative activity modest.[164] Scherer also puts forward arguments towards Schumpeter's view that monopolies are an ideal source of funds to support innovation due to their huge profits, and points out that the decision by monopolists to reinvest their profits in innovation depends on a variety of factors, including current strategies. Additionally, today, with developed financial markets, a number of other capital sources for innovation are available for smaller firms.[165]

Empirically, there is evidence, found by Scherer and Ross, in support of the theory that competition as market structure stimulates R&D up to a certain level. Accordingly, when plenty of technological opportunities existed, and technological change was intense and unexpected, rivalry was a stimulant. Scherer and Ross found an inverted-U relationship between market structure and incentives for innovation, suggesting that up to a point, increased fragmentation stimulates more investment in R&D, but when the number of firms becomes so large that no individual firm can appropriate rents sufficient to cover its R&D costs, innovation can be slowed.[166] A more recent study by Aghion et al[167] supports the relationship found by Scherer and Ross. They show that "escape-competition effect", i.e. that more competition induces firms to innovate in order to escape competition, tends to dominate for low initial levels of competition, whereas the Schumpeterian effect tends to dominate at higher levels of competition.

Summarizing, the overall effect of market structure on innovation is complex. Whether competition promotes innovation better than concentration depends, among other things, on the nature of the innovative process and the innovative environment, as well as the characteristics of the industry under consideration. Theory has generally supported Schumpeter's hypothesis. The empirical evidence in favour of Schumpeterian innovation, on the other hand, is weak. Concluding, "*we do not know what the effect of market structure on investment incentives are*". Economic theory does not have a precise answer to whether 'competition drives innovation' or

[162] Scherer, *Innovation and Growth: Schumpeterian Perspectives*, p. 79-127.
[163] Levin, Cohen, Mowery, *R&D Appropriability, Opportunity, and Market Structure: New Evidence on Some Schumpeterian Hypothesis*, p. 20.
[164] Scherer, *Innovation and Growth: Schumpeterian Perspectives*, p. 87.
[165] Scherer, *Innovation and Growth: Schumpeterian Perspectives*, p. 48.
[166] Scherer, Ross, *Industrial Market Structure and Economic Performance*, p. 635-637.
[167] Aghion et al, *Competition and Innovation: an inverted U relationship*, p. 43.

'innovation is best fostered – and financed – by large firms with significant monopoly power'.[168]

4.3.4 Compulsory licensing and Innovation

The effects of a compulsory licence on the incentives to invest in R&D for innovation are quite complex. Imposing compulsory access conditions may increase static allocative efficiency, however, it can also reduce welfare in the short run by compelling inefficient licensing, as well as reduce welfare in the long run by reducing incentives for innovation as the duty reduces the return by the owner of the property right.[169] The available empirical work provides, however, little support for the latter effect.[170]

A distinction is made between an ex post and an ex ante view. From an ex post perspective it is often most efficient to make the intellectual property right widely available through compulsory licensing. The increase in competition allows market equilibrium to arise improving allocative efficiency. However, this static ex post analysis ignores the ex ante dynamic efficiencies which are spurred by the prospect of gaining a certain degree of market power and earning monopoly profits. From an ex ante perspective the general approach is that the incentives to innovate and create the intellectual right will decline, as the ability to exclude diminishes. Moreover, there is a risk that the threat of imposing a compulsory license too lightly may reduce the incentives of firms to invest in their own inputs, with the result that they instead would seek access to existing inputs through competition enforcement.[171] Against this, stands the fact that compelling a monopoly to sell at a specified compulsory fee, rather than the monopoly profit-maximizing price, the imposition of a duty to license radically reduces welfare losses, in terms of deadweight loss, thus promoting economic efficiency.[172] Compulsory access has also been recognised to facilitate incremental innovations for those firms gaining access, and thereby increase the level of competition in the market. Seen in the long run, if access rights foster the growth of competitors' experience, they may also facilitate more fundamental innovations.[173]

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[168] Régibeau, Rockett, *The relationship between Intellectual Property Law and Competition Law: An Economic Approach*, p. 28.
[169] Gilbert, Shapiro, *An Economic Analysis of Unilateral Refusals to License Intellectual Property*, p. 12753.
[170] Fisher, *Intellectual Property and Innovation: Theoretical, Empirical and Historical Perspectives*, p. 13.
[171] Humpe, Ritter, *Refusal to Deal*, p. 136.
[172] Fisher, *Intellectual Property and Innovation: Theoretical, Empirical and Historical Perspectives*, p. 13.
[173] River, *Innovation and competition policy*, p. 97.

4.3.5 Intellectual property and Innovation

According to the Kok Report[174], prepared in response to an initiative of the European Council, it is recognised 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. Granting intellectual property rights gives the inventors the opportunity to exclude competitors from the result of their innovative efforts, and ensures that they can recover their sunk costs and receive a return that compensate them for the risk, which is recognised to have a positive effect on the incentives for innovation.[175]

The scope of intellectual property rights protection is likely to foster different kinds of incentives. Edmund Kitch, introducing the prospect development theory, postulates that granting broad patent on early stage inventions allows the inventor to reap the benefits needed in order to coordinate and induce proper R&D investment within the area of the patent claim and thereby enhancing efficiency in innovation. Patents, with a wide area of exclusiveness, are seen as incentives mechanisms to spur a competitor to be the first in a new field, where the holder can reap the awards of the invention.[176] Opposite, a narrow patent is said to stimulate research of a parallel and cumulative nature, which is likely to create variety in the research result that is beneficial in a dynamic perspective.[177]

Traditionally economic theory considers intellectual property rights as incentives in order to foster innovation. The question is; should this approach be upheld even when it can be proved that these rights actually induce the opposite effect of hindering innovation. In the last decade economic thinking has started to move away from its traditional perspective of intellectual property rights as mechanisms for innovation. Research has been conducted to answer when exclusive rights to intellectual property may be expected to spur innovation, and when the opposite is more likely.[178]

A study conducted by Cohen et al show that a strong IP protection might induce firms to protect unused technologies with the exclusive rights at hand and by that hinder the exploration of specific technological course by rivals.[179] Additionally, the growing costs of patent litigation due to the increase of intellectual property protection could have negative affect on the incentives to innovate.[180] Moreover, research by Heller and Eisenberg has

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[174] *Facing the Challenge. The Lisbon strategy for growth and employment.* Report from the High Level Group, November 2004.
[175] Ahlborn et al, *DG Comp's Discussion Paper on Article 82: Implications of the Proposed Framework and Antitrust Rules for Dynamically Competitive Industries*, p. 17.
[176] Kitch, *The Nature and Function of the Patent System*, p. 276-279.
[177] Merges, Nelson, *On the Complex Economics of Patent Scope*, p. 839.
[178] Vezzoso, *The Incentives Balance Test in the EU Microsoft Case*, p. 386.
[179] Cohen, Nelson, Walsh "*Protecting their Intellectual Assets: Appropriability Conditions and Why U.S. Manufacturing Firms Patent (Or Not)*"
[180] Lanjouw, Schankerman, *An Empirical Analysis of the Enforcement of Patent Rights in the United States*, p. 2.

shown that intellectual property rights often constitute a deterrent for investment in innovation when innovations are complementary.[181]

Empirical research conducted by Levin et al[182] testifies to the perception that the strongest incentive for companies in protecting and exploiting innovation may not be intellectual property right protection. Instead firms put a higher value on business strategies, being first with an innovation and keeping process innovations secret, than they do for example on patents.[183] Jaffe[184] confronts the outcome of the research with the increase in patenting, and asks why firms take out patents despite the fact that they do not perceive them as an effective mechanism for innovation incentives. The explanation he offers concerns the multiple ways that firms use patents for blocking competitors or as bargaining chips in negotiations. As Jaffe argues, the more firms block and gather bargaining chips, the less they all succeed in increasing their returns from innovation. Although a firm's private marginal return on patenting may be high, in the end firms actions offset each other, and the consequence is that the value of patents is being diminished. According to Jaffe it is therefore being recognised that patents do not always stimulate innovation but may be used for defensive purposes and may retard (follow-on) innovation.

Concluding the research in this area; intellectual property protection should not be overrated as a determinant for innovation. There is a growing consensus among economists that intellectual property rights offer a real, but in some cases limited incentive to innovate.[185] However, R&D varies greatly between industries originating no overall well-suited generalisations for analysing and determining the impact. For instance software and computer industries have been greatly innovative despite historically weak patent protection.

4.3.5.1 Software industry

The characteristics of the IT economy lies in the acknowledgement that any failure to follow the rapid innovation race may be fatal for any firm competing in the software market.[186] To quote Shapiro "*the classical notion of the sleepy monopolist just does not fit this sector*".[187] Today it is generally accepted that most of the leading companies in the IT sector are

[181] Heller, Eisenberg, *Can Patent Deter Innovation? The Anti-commons in Biomedical Research*, p. 698.
[182] See Levin, Klevorick, Nelson, Winter, "*Appropriating the Returns from Industrial research and Development*", and the follow-up to this survey by Cohen, Nelson, Walsh "*Protecting their Intellectual Assets: Appropriability Conditions and Why U.S. Manufacturing Firms Patent (Or Not)*"
[183] Cohen, Levin, "*Empirical Suggestions of Innovation and Market Structure"*, p. 1059.
[184] Jaffe "*The US Patent System in Transition: Policy Innovation and the Innovation Process*", p. 16.
[185] Menell, *Intellectual Property: General Theories*, p. 136.
[186] Roussos, *Mandatory access to essential facilities in the IT sector: Extending or Limiting the scope of Article 82 of the EC Treaty?*, p. 4.
[187] Shapiro, *Competition Policy in the Information Economy*, p. 3.

obliged to continuously either improve or offer new products in order to protect their current positions.[188]

It has been stated that in high-tech industries there is competition *for* the market rather than competition *on* the market. Innovation can be considered to be more important than price competition. A company realising the commercial importance of a new product and being able to develop it before anyone else, will hold a "first mover" advantage. Once the product has been introduced on the market, others will challenge the innovation holder. Competition then shifts from innovation to price. Selling out-dated products at lowest possible price does not promise to be profitable, since new products with better features arise. Hence, "*competition for the markets actually means that successful companies manage to have at least one latest generation product at market stage*". [189]

Looking at many of the high-tech oligopolistic markets, especially computers, Baumol[190] considers these to display imperfect but effective competition, due to the primary weapon being competition in innovation, instead of price. In these markets, where several of rivals are active in innovation, R&D investments become a natural and regular part of the competition and innovation process. Indirectly, this implies that firms cannot, from an ex ante point of view, expect higher returns on R&D investments than from other kinds of investments. This leads to the notion that firms must optimise their R&D investments in order to survive on the market.

It is apparent that the incentive mechanisms spurring innovation may not always come from traditional intellectual property rights. Recent studies on the economics of innovation have shown that innovation is a highly complex area, in which several factors such as specific capacities by actors, path dependencies of technological developments and unpredictable events are involved. Studies have been conducted in the path to understand how innovation is organised in the open source software market.[191] Bessen & Maskin[192] conducted a study where they show that in software industries, where innovation is both sequential (the inventions builds on each other) and complementary (different research lines are pursued to solve a problem), competition can increase firms' future profits thus offsetting short-term dissipation of rents. In such a dynamic industry patent protection may decrease overall innovation and thereby social welfare. This because, in a static world, imitation is said to inhibit innovation, through the free rider problem, and patents protect innovation incentives, while in a dynamic

[188] Roussos, *Mandatory access to essential facilities in the IT sector: Extending or Limiting the scope of Article 82 of the EC Treaty?*, p. 5.
[189] Reimann, *Essential Function vs Essential Facility: Defining the amount of R&D protection in high-tech industries after IMS and Microsoft*, p. 50.
[190] Baumol, *The free-market innovation machine: analyzing the growth miracle of capitalism*, p. 4-30.
[191] Vezzoso, *The Incentives Balance Test in the EU Microsoft Case: A Pro-Innovation "Economics-Based" Approach?*, p. 387-388.
[192] Bessen, Maskin, "*Sequential Innovation, Patents and Imitation*".

world imitation may benefit the original innovator and society as a whole, through licensing direct to competitors, and patents may constrain complementary innovation.

When looking back at the history of the economic sector, fairly little support is found for the hypothesis that innovation is best fostered by monopolies in industries like the PC.[193] The reason for this lies in the specific features of the high-tech market; lock-in, high sunk costs, network[194], winner-takes-all, low marginal costs, all which can amplify innovation anticompetitive effects. In this sector it is likely that one product or standard tends towards dominance, which in turn generates high direct and indirect network effects. The software market is also specific in the sense that innovation process is easily blocked by the innovator's entrenchment in what is describing as the "technological frontier". Due to these conditions a dominant firm is enabled, firstly, to block subsequent innovation, both of competitors, and of the dominant firm itself by not having any incentive to overtake it. Secondly, having obtained the technological frontier, the dominant firm is enabled to prevent competitors from reaching it as well.[195]

This notion contradicts the theory of market leaders, which suggests that the conditions in the software market are ideal for allowing a single leader to produce for the whole market. Although Microsoft has in the last 10-15 years held a global leadership, the firm has been constantly aggressive in its innovation behaviour, as any firm under the threat of competitive pressure would be.[196]

As to whether mandating access to interoperability information would increase innovation on the work group server market is unclear. History gives evidence of a modest effect of competition policy interventions in the PC industry. Economic studies point at a sector that is characteristic to have both more forces for change and more forces for stasis (i.e. network effects) than other industries, which make a disclosure assessment difficult to predict.[197] According to the Commission a compulsory license should make software producers' willing to invest more in the innovation of their products.[198] Nevertheless, this reasoning can be questioned on two grounds. Firstly, what is to say that considerable investments were not made even before the disclosure. Secondly, pointing to the fact that the theory on the innovation process is controversial. Also it does not seem unreasonable to argue that innovation on the software market will depend on the actual conditions set out in the disclosure obligation. As stated in the DG Comp's

[193] Vezzoso, *The Incentives Balance Test in the EU Microsoft Case: A Pro-Innovation "Economics-Based" Approach?*, p. 389.
[194] Network-effects make it difficult for a customer to switch to an alternative product if this is not compatible with the current standard.
[195] Ghezzi et al, *Exclusionary Innovation: How to avoid innovation to be stifled remedies identified for the software sector*, p. 2.
[196] Etro, *Competition Policy: Toward a new approach*, p. 43.
[197] Vezzoso, *The Incentives Balance Test in the EU Microsoft Case: A Pro-Innovation "Economics-Based" Approach?*, p. 388.
[198] Case COMP/C-3/37.792 *Microsoft*, para. 695.

Discussion Paper on Article 82 EC "*The nature and magnitude of the impact of competition policy on investment and innovation in general, and on the ICT in particular, depends crucially on the precise rules applied to the assessment of the business practices of dominant firms.*"[199]

4.4 Current EU competition policy and Innovation

In the European debate a lot of attention has been given to promoting competition and innovation. The Lisbon Strategy, as targeted in the 2002 Barcelona European Council, has closely focused on innovation. The EC has set the specific target to increase the average level of R&D expenditure in the EU from 1,9% of GDP to 3% by 2010.[200]

As mentioned earlier the Commission has published a discussion paper that goes some way towards an economic based enforcement in which focus is on effects. The importance of innovation has been recognized in the paper where the Commission emphasis "*In order to maintain incentives to invest and innovate, the dominant firm must not be unduly restricted in the exploitation of valuable results of the investment. For these reasons the dominant firm should normally be free to seek compensation for successful projects that is sufficient to maintain investment incentives […]"* also by means of excluding *"others for a certain period of time in order to ensure an adequate return on such investment, even when this entails eliminating effective competition during this period."*[201]

Furthermore the European Commission has repeatedly argued for the importance of the ICT sector for growth in its striving to make the European Union the leading information society in the world.[202] As recognized in the Lisbon Summit, it is of the outmost importance to ensure that innovation in the new knowledge-based economy is rewarded, particularly through patent protection, as a way to achieve the stated goal.[203]

One important baseline issue the Community Courts have to consider is whether to focus on efficiency from an ex ante or an ex post perspective. In the case law the Commission and the European Court of Justice traditionally have focused solely on the increased "allocative efficiency" from an ex post view, which according to the authorities would be gained by stimulating competition between the access "giver" and the access seeker(s) in downstream markets. The reason for this choice could be that ex post

[199] Ahlborn et al, *DG Comp's Discussion paper on Article 82: Implications of the Proposed Framework and Antitrust Rules for Dynamically Competitive Industries*, p. 4.
[200] Etro, *Innovation and patents for the software industry: an empirical analysis of the EU and US cases*, p. 21.
[201] European Commission, *DG Competition discussion paper on the application of Article 82 of the Treaty of exclusionary abuses*, p. 66, §235.
[202] Ahlborn et al, *DG Comp's Discussion paper on Article 82: Implications of the Proposed Framework and Antitrust Rules for Dynamically Competitive Industries*, p. 54.
[203] European Council, *Presidency conclusions*, para. 12.

allocative efficiency gains are generally considered easier to measure than ex ante ones. Concerning ex post gains, a compulsory license will often lead to results identifiable in the short-term, such as falling prices and increased competition in the downstream market. However, the ex ante incentives which can be harmed by the disclosure are far more difficult to measure. The short-term gains also give the Commissioners' the opportunity to directly show the public that they are promoting competition in the market and protecting consumer welfare.[204]

The only significant reference to the ex ante vs. ex post efficiency in the case law can be found in the Opinion of the Advocate General Jacobs in the *Bronner*[205] case, where he stated[206]: *"The justification in terms of competition policy for interfering with a dominant undertaking's freedom to contract often requires a careful balancing of conflicting considerations. In the long term it is generally pro-competitive and in the interest of consumers to allow a company to retain for its own use facilities which it has developed for the purpose of its business. For example, if access to a production, purchasing or distribution facility were allowed too easily there would be no incentive for a competitor to develop competing facilities. Thus while competition was increased in the short term it would be reduced in the long term. Moreover, the incentive for a dominant undertaking to invest in efficient facilities would be reduced if its competitors were, upon request, able to share the benefits. Thus the mere fact that by retaining a facility for its own use a dominant undertaking retains an advantage over a competitor cannot justify requiring access to it."*

There are few compulsory licenses granted, indicating a Schumpeterian perspective towards innovation. However, in the recent case of *Microsoft*, the Commission seems to accept an innovation theory which suggests that technical development in the IT industry is best promoted by competitive market conditions, i.e. when a sufficient number of firms innovate rather than one monopolist.[207] This line of reasoning is consistent with the philosophy underlying the interoperability provisions of the Computer Software Directive[208].[209] As discussed above, market structures and

[204] Geradin, *Limiting the scope of Article 82 EC: What can the EU learn from the U.S. Supreme Court's judgment in Trinko in the wake of Microsoft, IMS, and Deutsche Telekom?*, p. 1540.
[205] See Opinion of A.G. Jacobs in *Bronner*, para. 57.
[206] Geradin, *Limiting the scope of Article 82 EC: What can the EU learn from the U.S. Supreme Court's judgment in Trinko in the wake of Microsoft, IMS, and Deutsche Telekom?*, p. 1540.
[207] Roussos, *Mandatory access to essential facilities in the IT sector: Extending or Limiting the scope of Article 82 of the EC Treaty?*, p. 17.
[208] The Commission concluded in the Microsoft case that the refusal at issue was a refusal to supply interoperability information, in the sense of the Software Directive, Council Directive 91/250/EEC (OJL 122, 17.5.1991). In that respect, the Commission noted that the Software Directive restricted the exercise of copyright over software in favour of interoperability, thereby stressing the importance of interoperability in the software industry. It also concluded that the Software Directive explicitly provided that its provisions were without prejudice to the application of Article 82 EC, in particular if a dominant undertaking refused to make information available which is necessary for interoperability.

innovation is still a very controversial issue from the economic perspective. In the *Microsoft* case, the Commission made findings, in various passages, of how Microsoft's behaviour harmed competition and innovation. For example: "*Microsoft's refusal puts Microsoft's competitors at a strong competitive disadvantage in the work group server operating system market, to an extent where there is a risk of elimination of competition*."[210] and "*Microsoft's refusal to supply has the consequence of stifling innovation in the impacted market and of diminishing consumers' choices by locking them into a homogeneous Microsoft solution…*"[211] Furthermore the Commission has regard for innovation when it states that rivals are being discouraged from developing new products as consumers are locked into the Window solution.[212]

Case COMP/C-3/37.792 *Microsoft*, paras 747-748.

[209] Anderman, *Does the Microsoft Case offer a New Paradigm for the'Exceptional Circumstances' Test and Compulsory Copyright Licenses under EC Competition Law?*, p. 20.

[210] Case COMP/C-3/37.792 *Microsoft*, para. 589.

[211] Case COMP/C-3/37.792 *Microsoft*, para. 782.

[212] Case COMP/C-3/37.792 *Microsoft*, para. 694.

5 Analysis of The Incentives Balance Test

5.1 Legal perspective

It has been said that the introduced incentives balance test has the merit to strike at the very heart of the intersection between competition law and intellectual property law as it has an innovation analysis in focus. As recognised in the objectives of the two bodies of law these have, as their common purpose, to enhance consumer welfare by ensuring technological progress and encourage innovation. The Lisbon Strategy, as well as the Commission in its discussion paper on Article 82 EC, also recognises the importance of ensuring innovation in the new knowledge-based economy by rewarding exclusive intellectual property rights in order to maintain incentives to invest. Accordingly, the Commission's test seems to ask the correct question: what is the best way of fostering innovation and thus consumer welfare? However, the challenge for competition law as to intellectual property rights is to establish a realistic, rational and predictable framework to determine those rare circumstances where the holder of the legal monopoly must share the intellectual property right with others. In view of that; is the incentives balance test the right tool to accomplish this task?

In the *Microsoft* Decision the Commission has departed from previous case law of the ECJ when shifting the 'exceptional circumstances' test to an 'entirety of the circumstances' test, and conducting an incentives balance test. As to the former test this can be argued to be nothing more than common sense and a statement that no one could object to – the Commission must consider all the circumstances surrounding the case and make its decision based on such a comprehensive analysis. (Recognising here the statement by the Court in *IMS Health* that the conditions set out are *sufficient*, which indicate that the Court thereby do not rule out all other conditions. A statement that, however, was made after the *Microsoft* Decision.) However, on another level it is worrying; the Commission does not put forward any test by which dominant firms can judge their actions and decide whether they are obliged to license their intellectual property rights. The lack of clarity is made worse by the way the Commission formulate the legal analysis and discussion as the Commission does not base its Decision directly on the existing criteria set by *Magill*, and later confirmed in *IMS*. There is an inconsistency with the settled case law, and one could therefore argue that the Commission's approach is a looser and less predictable one. Although not claiming that the former settled criterions are precise, since, discussed previously in the thesis, they indeed are open for wide interpretations.

What is more, the latter test, which has been the object of some critique, is not consistent with previous case law either. At first sight, the incentives balance test would seem to constitute a new elaboration of the content, or something that could constitute the content, of objective justification, as it is used in context with Microsoft's defence argument regarding its decline in incentives to innovate if a compulsory license should be ordered. However, when analysing the decision there is also a possibility that the incentives balance test could constitute a fifth criterion in the legal test, or stretching it even further, that the incentives balance test is used, not as a fifth criterion, but as a criterion that is predominant, and thereby could outweigh the others. The perception that the Commission does not fully demonstrate evidence of the case fulfilling the criterions set out in *Magill* although ordering a compulsory license anyway could speak for the last assumption being at hand.

The principles of legal certainty and the rule of law require that a dominant firm should be able to determine from the outset whether its conduct is likely to be legal or not. Predictability is an important aspect of competition policy law. Running a successful business is about the ability to be forward looking to make the right choices and investments at the right time. Management decisions about technology, markets, and competitors are complex and determine the success or failure of firms. Increased regulatory uncertainty raises costs, threatens survival and potentially reduces economic growth. This pleads in favour of clear standards, rules that are predictable, and against complex ex post balancing acts. The incentives balancing test requires a company to compare its incentives to innovate with the positive impact a compulsory licence would have on the market. This, in turn, forces the company to make two balancing acts *ex ante*, namely whether a compulsory license would have a negative or positive impact on the firms own incentives to innovate, and whether this impact, if negative, outweighs a possible positive impact on the whole industry. Troubling, the Commission failed to offer any guidelines regarding its methodology and the process it will follow in subsequent cases on the IT market, or any other market for that matter, regarding the outcome of the balancing process. Such an open-ended, subjective balancing test may have significant and adverse effects on the level of legal certainty and predictability which must characterize EC law in general, as no firm will be in a position to know (or even make a reasonable guess) *ex ante* its outcome.

Furthermore, in the view of legal certainty, it is of utmost importance that each type of exclusionary practice should be informed by empirical evidence of whether the practice is, on balance, more likely to lead to harm rather than good. Where no reliable empirical evidence is available, economic theory can provide useful information. This perception is noticed by the EAGCP in its Paper on Article 82. The explanations are important as they can help justify an intervention, and thereby give guidance to when antitrust policy overrides the intellectual property right owners interests, which in turn can lead to some predictability for the firms. The incentives balancing test requires that such evidence, empirical and theoretical, are

investigated and analysed, which makes it attractive from a legal certainty point of view. Nevertheless, the area which the test covers is huge and extensive, and requires a complex balancing act between different, often contradictory or even non existing, studies and theories. The Commission did not put forward such evidence in favour of its decision, a behaviour that can be interpreted as giving the test an unclear interpretation.

Antitrust rules, and analysis, must be tailored to the situations in which it is applied. For this reason legal precedent or economic justification does not support a *per se* rule against antitrust intervention. The ECJ has in its settled case law used a "checklist" approach, where a certain degree of flexibility has been undertaken by identifying only *some* requirements that must be met in each case. With this approach the ECJ has created a certain degree of predictability for the market participants as to when antitrust intervention can be undertaken. The new incentives balancing test, and the *Microsoft* Decision, can, however, put this approach to an end. Theoretically the case-by-case assessment of the positive and negative effects of antitrust intervention on incentives to innovate, which the test provides for, can be a more attractive proposition. Indeed, while a compulsory license can reduce incentives to innovate, and thus distort competition, the magnitude of that risk varies from case to case, industry to industry. However, a case-by-case assessment of the positive and negative effects of antitrust intervention in terms of *ex ante* incentives versus *ex post* benefits to competition is fraught with difficulties. There is also a danger that such an assessment in practice would stretch the duty to deal beyond its proper scope by shifting its focus from the prohibition of abusive conduct to a detailed analysis of markets resulting in a finding of liability whenever the market possibly could be made more competitive, even in the absence of any clearly reprehensible conduct. Additionally, there is a risk that the application of the law will become unpredictable and produce largely inconsistent results. The resulting uncertainty could discourage aggressive competition on the merits.

The legal test used in *Magill*, and further on in *IMS*, has taken account of innovation as an important factor by in particular the requirement of a new product, which the Court consider a balancing act between the interests of the property owner and the benefits of free competition and follow-on innovation. When the Court requires the emergence of a "new product" for which there is a "potential consumer demand", not a mere duplication, it shows a consistent line with innovation policy in the sense that it is unwilling to derogate from the intellectual property owners right unless there is a larger innovation gain elsewhere. However, the difficulties of determining the definition of a "new product" makes the task complex, a notion also put forward by professor Lévêque. It is arguable that in *Magill*, where the material was public non-secret information, and *IMS*, where the property right was developed in collaboration with those who were to be the recipients of the data, the intellectual property right was not overwhelmingly strong while the benefit of competition and consumer demand was, making the requirement of a novelty and new product easy to overcome. This compared to Microsoft that has a copyright protection right which they have

developed themselves by investing huge amounts in R&D. Giving access to this right, without the element of a new product fulfilled, could do serious harm to the legal standard set by ECJ and a firms ex ante incentives, as the more unique and valuable an innovation is for its owner and its rivals, the greater the likelihood that the innovator will be forced to share it in the name of competition and consumer welfare.

Indeed, the importance of innovation has been recognised in the case law by the ECJ previous to the Commission's incentives balance test. Is this recognition enough or is the legal area in need of the incentives balance test, and which, the new product condition or the Commission's test, serve the legal principles best? As noted before the innovation concept has gained a significant role in the Community over the last years, which make the test valuable as it has its focus directly on an innovation analysis, something that is a part of the new product test but not its core element. Lévêque has in his analysis of the two legal tests found in favour of the incentives balance test since this is said to be a good method to evaluate consumers' benefits, and furthermore takes appreciation of the nature of intellectual property rights. This compared to the new product test in which the difficulties to define newness, and evaluate consumer loss by not receiving a new product is problematic. Nevertheless, although the new product test has its faults, for example interpretation issues, it is questionable whether the incentives balance test is an easier and more reliable tool to judge innovation contribution, as this legal test is based on economic theory and calculations, which in many cases are not only contradictive but also difficult to carry out.

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5.2 Economic perspective

As one of the economic goals in the Community is to enhance investments and innovation, the incentives balance test accordingly considers this pursuit. The review by the Commission of the interpretation of Article 82 EC and the report by EAGCP are concentrated on an economic approach to dynamic and innovative markets. Emphasis is on achieving a procedure in which competition authorities identify the economic theory, and the facts that support the theory, in its competition policy. Hence, the incentives balance test can constitute a means to achieve this approach.

Economic theory, and dynamic efficiency, is at focus in the incentives balance test. Judges turn to economic analysis to separate ordinary business activity, that is to say the activity of market competition, from conduct inimical to the operation of competitive markets. Economic analysis, however, does not always provide a single, accepted answer to judges' questions. The incentives balance test covers the innovation process and raises questions such as; what market structure promotes innovation best, does intellectual property give raise to incentives to innovate, and what effects can a compulsory license have on incentives to innovate?

As recognised, there are primarily two theories on what market structure that best promote innovation, and several empirical studies conducted in the market place. Despite this, evidence is largely inconclusive regarding what market structures and concentration levels best encourage R&D and innovation. As mentioned before we do not know what the effect of market structure on investment incentives are. Consequently it is probably reasonable to say that innovation is generally best spurred neither by unthreatened monopolistic companies nor by a totally competitive market structure. Proper R&D incentives should require at least some competition, at least potential. More precise generalisations and conclusions are very difficult to make since technological opportunities, and the character of innovation and the market vary largely from industry to industry. The conclusion, that no general answer is to be found in economic theory, can arguably cast a shadow over the incentives balance test and its legal certainty.

The conclusion that can be conducted from the Microsoft case is that the Commission seems to accept an innovation theory based on the premise that innovation is best promoted by competitive market conditions, namely when a sufficient number of firms innovate rather than one, at least in the software industry. This approach implies that the Commission feels confident that it can efficiently draw the line between the two extremes, although economic theory has not firmly settled the relationship between market structure and innovation incentives. Given this, adopting the one side or the other may not be wrong in economic terms, however, the legal aspect of predictability for firms can be weakened.

Intellectual property rights are, according to traditional economic theory, seen as incentives to spur innovation. Recent studies have indicated that these right have not only lost their importance as incentives mechanisms, especially in the software industry, but can also be expected to deter innovation. In this light, the incentives balance test seems to be in line with the most recent economic thinking as the test has the merit to identify the special circumstances in which intellectual property rights do not fulfil the function for which they are granted.

Because the test has exclusive focus on innovation incentives when dealing with compulsory licensing it is required by the competition authorities to engage in a social welfare calculus and balance the pro-competitive effects of a compulsory license against the adverse effects of a compulsory license on the intellectual property owner's incentives to innovate. However, there is no reliable way in which such an exercise can be undertaken *ex post*. Once an intellectual property right has been created, and allows a firm a legal monopoly, it will always look attractive from an *ex post* view to share it. *Ex post* efficiencies are more tangible and easier to measure than *ex ante* dynamic efficiencies, which could result in a bias in favour of *ex post* benefits. This is especially so where the *ex post* reward exceeds the initial expectation of return. The fact that it is very difficult to forecast and measure dynamic efficiencies and future impact contributes to the difficulty.

But the prospect of large monopoly profits could be the incitement that spurs risky decision-making *ex ante*. There is no effective resolution of this dilemma, however, a second-best solution can be employed in which the innovation process in the actual industry is carefully analysed. The balancing act between ex ante and ex post efficiencies that the incentives balance test requires is obviously a very complex process. The risk of mistaken decisions is therefore high. Additionally, as a balancing test is open in the sense that it can be approached from several different angles and perspectives, the way the authorities will choose to approach a case will not be easy to foresee in advance, causing a discontent in the legal principle of predictability.

It has been shown that the incentives balance test requires a complex, extensive economic analysis. One could wonder if the competition authorities are well equipped and capable of making the necessary calculations to regulate innovation. If they lack the scientific and technical expertise that the incentives balance test administrability requires both the legal aspect and the economic aspect will suffer greatly. A careful assessment of underlying market conditions is crucial. In industries where dominant companies are common it is vital that the competition law does not impede the possibilities and the urge for these companies themselves to compete. For the dynamic process to work there is need for competition on the merits. Innovative success or superior efficiency should therefore not be held against a company. Dominant firms are supposed to compete vigorously, however, if their conduct diminishes other firms' abilities and incentives to innovate, the incentives balance test could serve as a tool to address an analysis of the situation.

6 Concluding remarks

The Decision taken by the Commission in *Microsoft* reveals not only an inconsistency with settled case law from the European Court of Justice, but states a new legal and economic policy for Europe and the competition law, a paradigm applying a new standard on when a compulsory license could be ordered.

The analysis shows that the incentives balance test, although concentrating on innovation in dynamic markets, which is one of the most important factors in the new knowledge-based economy, and furthermore takes appreciation of the function of intellectual property rights, is questionable from both a legal and an economic perspective. An ex post case-by-case assessment where short-term allocative benefits shall be balanced against long-term dynamic ex ante efficiencies is a complicated task, even for the most experienced economist, not to mention competition authorities. The test requires extensive research for each case and for the market industry the firm operates in. The fact that economic theory does not give a conclusive answer to the question of what fosters and discourages innovation can without a doubt cast a shadow over the test's practise. Taken all together, this new incentives balance test represents a considerable loosening of the circumstances as recognised by the ECJ in the settled case law when a compulsory license could be ordered and, as a consequence, introduces a considerable degree of legal uncertainty.

The compulsory license concept, however, is neither passing nor fixed. It is, rather, evolving. The *Microsoft* case shows that the Commission is prepared to evaluate incentives, abilities and efficiencies in innovation, and to balance the interests of a dominant company and the potential exclusionary effects. Meanwhile a comprehensible method to fulfil this task is found, competition law needs to be clear and predictable so that market participants can organise their business efficiently and have the confidence to invest and innovate. This is particularly important in a regime where substantial responsibility is put on market actors to determine from the outset of the competition law whether their own conduct is likely to be legal or not.

Supplement A

Article 82

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 in so far 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.

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