



THE EVOLVING INTERFACE BETWEEN EUROPEAN COMPETITION LAW AND INTELLECTUAL PROPERTY RIGHTS: IS THERE A BALANCE TO BE ACHIEVED?

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Abstract

A comprehensive debate on the interface between IP (Intellectual Property) and European competition law has emerged over the past 50 years. The initial section of this article examines the gradual development of this conflicting relationship between the two laws. This is followed by an extensive analysis of the relevant precedent, focusing specifically on the significant rulings in *Microsoft* and *IMS Health*. The analysis explores the European competition authorities' preference to protect competitors' interests over achieving the general consensus for efficiency in the market and tackles the complex question of whether IP holders should be burdened with the responsibility of safeguarding the commercial well-being of their rivals. In light of the pre-existing case-law, various economic proposals are introduced which demonstrate a potential balance between the protection of IPR (Intellectual Property Rights) and the intervention of European competition law. It is then assessed which proposal will most effectively resolve the conflict between the two laws, and whether this proposal is a permanent solution.

Introduction

Most contemporary accounts of European integration began with the implementation of the ECSC (European Coal and Steel Community) which desired the creation of a united Europe. To form closer relations between Member States (MS), a common market was engineered 'promoting harmonious development of economic activities throughout the Community'.¹ The Treaty of Lisbon (ToL) represents the culmination of 50 years Treaty reform with the purpose of conceiving a Single Market 'which...would ultimately yield the much vaunted ever closer union of the peoples of Europe'.² However, the economic and political implications of forming a Single Market have raised the concern of whether such a market structure will protect consumer interests.

¹ Burca G., Craig P., *EU Law: Text, Cases and Materials* (2011) 5th ed. Oxford University Press p.6.

² Weiler. J, 'The Transformation of Europe', (1991), 100 *Yale LJ* 2458.

A New Approach was designed through the *Cassis de Dijon* principle³ which demanded that legitimately marketed goods in one MS must be allowed to circulate freely in other MS', ultimately paving the way for the launch of the Single Market. McGee and Weatherill suggested that structurally this New Approach will serve European consumers ill.⁴ They proposed that when lobbying European institutions, business groups are better organised and funded than consumer groups and hence are more likely to procure changes that favour their interests, whilst consumer interests are ignored. This should not be a surprise. However, it does raise the question of what sort of Single Market has been formed and more pertinently, what affect this market structure had on the development of European competition law; which is examined in the following section.

1 Supersession in European Competition Law

A view of European Competition Law is that efficiency should be produced by allocating:

resources...with the individuals or firms that value them most highly. The purest definition of allocative efficiency is Pareto optimality...To achieve optimality, individuals must be allowed to exchange products and services...they value less highly to obtain those that they value more highly from other individuals who value more highly the goods and services that they receive in return.⁵

Alternatively, economists devised dynamic efficiency which was 'described as the capacity of an economic system to stimulate entrepreneurial creativity and coordination';⁶ requiring firms to constantly strive to produce new and more effective products. Although the exercise of IPR produces allocative inefficiency, IP law argues this to be 'justified by the dynamic incentives'.⁷ The principles monitoring anti-competitive behaviour within the Single Market were originally implemented by the Treaty of Rome (ToR) and addressed under Articles 85 and 86 of the EEC.⁸ Article 86 will be the sole focus of this article, which is exercised in a much more straightforward construction than Article 85. It provides that any: 'abuse by one or more undertakings of a dominant position within the internal market or in a substantial part

³ Established in *Rewe-Zentral AG v Bundesmonopolverwaltung fuer Branntwein (Cassis de Dijon)* [1979] ECR 649, which is laid out more thoroughly in The implementation of the New Approach Directives, COM (2003) 240.

⁴ McGee A., Weatherill S., 'The Evolution of the Single Market – Harmonisation or Liberalisation' (1990), 53 *MLR* 585, p.595.

⁵ Jost T., 'Health Care at Risk: A Critique of the Consumer-driven Movement' (2007) 1st ed. Duke University Press, p.88. European competition law prioritises optimality because theoretically perfect competition, where consumer welfare is maximised, produces the most efficient goods and services.

⁶ Soto J., 'The Theory of Dynamic Efficiency', (2009) 1st ed. Routledge Foundations of the Market Economy, p.29.

⁷ Stiglitz J., 'Economic Foundations of Intellectual Property Rights' (2008) Vol. 57:1693 *Duke Law Journal* p.1704.

⁸ Initially superseded by Articles 81 and 82 of the EC Treaty (Treaty establishing the European Community), then further superseded by, Articles 101 and 102 of the TFEU (Treaty on the Functioning of European Union).

of it shall be prohibited as incompatible with the internal market in so far as it may affect trade between' MS.⁹ To simplify these formalities, in order to benefit firms and enable the Commission to tackle serious infringements of competition policy, the Commission launched a long process to amend these Articles. This arguably, unbeknown to the Commission, is when the tension between exclusive IPR and European competition law in respect of Article 86 began.

Although IPR are not immune from EU intervention, Article 345 of the TFEU states that the 'Treaties shall in no way prejudice the rules in MS governing the system of property ownership'. This blurs the fine line between a MS acceptably exploiting their IPR and unacceptably abusing its dominant position. According to the EC, both European competition law and IPR are arguably successful at increasing competitors' incentives to innovate in the Single Market.¹⁰ However, whether competition law should be used as a tool to limit the exploitation of IPR, or whether IPR holders should possess an absolute right in the Single Market remains ambiguous. The following case-law explores these points.

2 Microsoft¹¹

In 1998, Microsoft was accused of refusing SM (Sun Microsystems) access to interoperability information to create their own original server products which would operate with Microsoft's Windows PC OS (operating system). The EC launched an investigation into Microsoft, with two concerns. Firstly, Microsoft's bundling of its OS with the Windows Media Player. This showed Microsoft's abuse of monopoly power in their primary market (operating software) to exclude competition in the secondary market (applications software¹²) and, as such, leveraged their monopoly power over both markets. Secondly, whether Microsoft's refusal to supply interoperability information to SM had prevented an alternative server being designed (without Microsoft Media Player), which had high consumer demand in the secondary market.

The EC concluded that anti-competitive behaviour was present, imposing a €497.2 million fine and ordering Microsoft to remedy their abusive behaviour. Firstly, by selling another version of Windows OS which was independent from the Windows Media Player software,

⁹ Article 82 of the European Economic Community Treaty 1957; now Article 102 of the TFEU.

¹⁰ Commission Notice, Guidelines on the application of Article 81 of the EC Treaty to technology transfer agreements, OJ 2004/C 101/02; the Commission also issued a Report on Competition Policy 2008, COM (2009) 374.

¹¹ European Commission, Commission Decision of 24 March 2004 relating to a proceeding under Article 82 of the EC Treaty, *Microsoft Corpn v Commission* [2004] ECR 2977.

¹² I.e. consumers purchasing Microsoft's OS would also have to purchase Windows Media Player application software from Microsoft.

creating a bundling remedy.¹³ Under the interoperability remedy, the EC enforced a compulsory licence on Microsoft, requiring them to supply the interoperability information in full and to make that information available on reasonable and non-discriminatory terms.

The European Courts and EC's difficulty in defining what circumstances warrant compulsory licensing has existed since *Volvo v Veng*.¹⁴ Generally, dominant businesses are free to licence their IPR to third parties if it does not amount to infringing competition law. As such, *Volvo* held that IPR holders exercising their exclusive rights, in particular refusing to grant a licence, cannot itself be regarded as an abuse of a dominant position.¹⁵ *Volvo* argued that when confronted with the tension between European competition law and exclusive IPR, the EC should balance the promotion of competitiveness in the market against the IPR holder's incentive to innovate. To exclude liability when refusing to licence IPR, dominant businesses were required to provide an objective justification. However, the EC failed to elaborate on what constitutes a valid justification.

In *Magill*,¹⁶ the court squandered its opportunity to define abusive conduct and reasserted its early *Volvo* ruling, that 'the exercise of an exclusive right...may nevertheless be prohibited by Article 86...if it involves on the part of the undertaking holding a dominant position, certain abusive conduct'.¹⁷ *Magill* 'did' confirm IPR holders' exercising their rights can only be classed as abusive in 'exceptional circumstances',¹⁸ however, the court, once again, neglected to present a strict rule to determine when parties' actions classify as 'exceptional'. Variables within the analysis, such as what constituted a 'new' product, also remained undefined. Such ambiguity raised the concern that the floodgates would be opened to an influx of courts granting compulsory licences.

In *Bronner*,¹⁹ the content did not primarily concern the licensing of IPR however, the case did introduce a clearer refusal to licence framework. The court held that there could be an abuse of dominance if:

¹³ The consequence of this intervention is potentially enormous and unjustified considering all companies pre-install software.

¹⁴ *Volvo AB v. Erik Veng (U.K.) Ltd. (Volvo Judgment)*, [1988] ECR 6211.

¹⁵ *Ibid*, para.8.

¹⁶ *Joined [hereinafter Magill]; Radio Telefis Eireann v. Comm'n* [1991] ECR 11-485; *Independent Television Publications Ltd. (ITP) v. Commission ("Magill")* [1991] ECR 11-575.

¹⁷ *Ibid*, para.72.

¹⁸ Evrard S., 'Essential Facilities in the European Union: Bronner and Beyond', (2004) 10 *Colum. J. Eur. L.* 491 p.11.

¹⁹ *Bronner (Oscar) GmbH & Co KG v. Mediaprint Zeitungs- und Zeitschriftenverlag GmbH & Co KG* [1998] ECR 7791.

(i) the refusal was likely to eliminate all competition in the...market...; (ii) that such refusal was incapable of being objectively justified; and (iii) that the service in itself was indispensable to carrying on that person's business, inasmuch as there is no actual or potential substitute in existence.²⁰

Consequently, courts are no longer permitted to grant compulsory licences on the basis that IPR holders' exercise a dominant position in the industry, as in *Magill*. Instead, the circumstances require IPR holders' to withhold information which is 'indispensable' to the competitor requesting it or to the industry as a whole.

In *Magill*, the court suggested that balancing the exclusive IPR against the public's interest could confront the conflicting areas of law. This requires the assessment of the short-term and long-term benefits of both laws. In *Microsoft*²¹ it was argued 'European competition law is inadequate in such markets...Remedies of forced disclosure of interoperability information would have a severely negative impact on innovation, as it would lead to the wholesale cloning of Microsoft's valuable' IPR.²² In the short-term, encouraging compulsory licensing would enable competitors to produce competing products and services, which would increase the level of output in the market. However, whatever the supposed short-run gains were, the long-run costs of decreasing Microsoft's incentive to innovate swamped these purported benefits, because companies would be reluctant to innovate if they knew 'the fruit of [their] success will be their demise due to...[competition law]...intervention'.²³

The ECJ's latest and most constructive assertion on when a refusal to licence constitutes an abuse of competition law was *IMS*' ruling.²⁴ The ECJ began by stating 'that bar for exceptional circumstances a refusal to licence is presumptively legal, even if it is the act of a dominant company'.²⁵ The ECJ designed criteria to access these exceptional circumstances, whereby a refusal to licence IPR constitutes abusive behaviour when:

- '1. The product or service protected by copyright must be indispensable for carrying on a particular business; and
2. The refusal prevents the emergence of a new product for which there is potential consumer demand; and
3. The refusal is not objectively justified; and
4. The refusal is such as to exclude all competition on the secondary market'.²⁶

²⁰ As per *Ibid*, para 41.

²¹ *Microsoft Corpn v Commission* [2004] ECR 2977.

²² Genakos C., Kuhn K., Reenen J., 'The European Commission versus Microsoft: competition policy in high-tech industries' (2007) 12 1 *Centrepiece*, pp.2-7.

²³ Katarzyna C., Komninos A., 'Competition Law and the Enforcement of Art.102', (2010) 1st ed. Oxford University Press, p.14.

²⁴ *IMS Health GmbH & Co. OHG v. NDC Health GmbH & Co. KG (IMS Health Judgment)* [2004] ECR 5039.

²⁵ *Ibid*, paras.34-35.

²⁶ Killick J., 'IMS and Microsoft Judged in the Cold Light of IMS' (2004) 1(2) *Compl. Rev* 23.

Considering the similarities, it suggests that the *IMS* criterion was designed on close reflection of the earlier *Bronner* ruling. *Bronner's* criterion was also used in the later *Microsoft* case with the Court of First Instance (CFI) emphasising that a single test 'cannot be the only parameter which determines whether a refusal to license...[IPR]...is capable of causing prejudice to consumers within the meaning of' Article 102.²⁷

Under this philosophy, although Microsoft infringed competition law under Article 102 of the TFEU, the EGC did not exclusively reject Microsoft's position. As such, it is arguable that despite Microsoft's reasoning to protect their invention being unjustified in this case,²⁸ it does not exclusively prevent this reasoning being successful in future case-law. However, in the latest *Microsoft* case,²⁹ the EGC rejected all previous limitations of technical development and explicitly quoted *IMS* as the legal precedent for refusal to licence cases.³⁰ This is an interesting area of concern that questions how far, if at all, competition law should constrain the exploitation of IPR? In order to increase economic growth, it is essential for businesses to compete through innovation, with the European software market being no exception. Therefore, this suggests that if IPR holders' profits are curtailed by competition policy and their incentives to innovate are reduced, this could negatively impact consumer welfare and economic growth.

Competitors' Interests' v Competitiveness of Market

Since the signing of the ToR, there has been significant institutional and substantive change to the initial powers of the EEC. These developments resulted in the CJEU and EC taking differing approaches to preserving competition. The belief is that:

'competition in dominated markets will only have optimal results if...competitors are protected from the constraints which follow from the dominance of one firm. European authorities...[showed]...a continuing interest in preserving rivalry...by protecting firms against the results of intensive competition. Consequently, they have been criticised for protecting competitors, not competition'.³¹

Arguments in favour of Monopoly Structure

At the opposite ends of the competitive business spectrum, there is perfect competition and monopolies. European competition law interprets perfect competition as producing the most

²⁷ *Microsoft Corporation v European Commission* [2007] ECR 3601, para.647.

²⁸ *Ibid*, para 707.

²⁹ *Microsoft Corporation v European Commission* [2012] 5 CMLR 797.

³⁰ This provided a degree of clarity in refusal to licence cases, but left area for improvement by future case-law.

³¹ As per Akman P., 'The Concept of Abuse in EU Competition Law: Law and Economic Approaches' (2012) 1st ed. Hart Publishing Ltd, p.52. And displayed in *Instituto Chemioterapico Italiano Spa and Commercial Solvents Corporation v Commission* [1974] ECR 223.

efficient goods and services, which unsurprisingly results in competition policy rejecting monopolies in the market. However, this avoidance is questioned by some - why does EU competition policy strongly reject the beneficial effects of a monopoly in the market? Especially when, it could be argued that a monopoly market structure maximises incentives to innovate which increases efficiency.³²

R&D (research and development) plays an essential role in producing 'profits, productivity, economic growth and total welfare' within markets and consequently, it is crucial to identify businesses' fundamental incentive to invest in R&D. J.A. Schumpeter's observation of the real world and, after ridiculing the value placed in efficiency, was that the most effective method of promoting programmes was through the facilitation of monopolies and oligopolies. These market structures have the ability to realise economies of scale, to standardise production and advance their control on the market to nurture innovations that might not immediately be profitable. Contrastingly, as a pioneer for dynamic efficiency, Schumpeter saw 'competition as a 'gale of creative destruction',³³ stating that the products and processes within industries are rapidly renewed and replaced by 'the new commodity, the new technology, the new source of supply, [and] the new type of organization'.³⁴

Monopolies achieve super-normal profits therefore they have the opportunity to invest their extra surplus into R&D, further promoting economic growth. Whereas firms within perfectly competitive markets instead receive normal profits, and consider it too risky to gamble their profits in the long-term benefits of innovation. Consequently, 'if one wants to induce firms to undertake R&D, one must accept the creation of monopolies as a necessary evil'.³⁵ This raises the question of whether Microsoft was the necessary evil in the software industry, because without them spurring dynamic efficiency, society arguably would not have benefited from the maximisation of innovation or growth.

Arguments against Monopoly Structure

One view is that, in the absence of competition, dominant firms will lack the incentive to produce better products or services and will therefore increase costs, negatively impacting consumer welfare. This is because despite old technology being renewed and replaced by updated technology and the possibility of an existing monopoly being superseded by another dominant firm, monopolies' pure incentive to innovate is to receive super-normal profits.

³² The historic 'Schumpeter and Arrow debate' explores this in great depth.

³³ Akman, 'The Concept of Abuse in EU Competition Law', p.22.

³⁴ Schumpeter J., 'Capitalism, Socialism, and Democracy' (1976) London: Allen and Unwin Publishing, p.83.

³⁵ Ibid, p.84.

Therefore, there is the risk that once a competitor challenges the existing monopoly, their incentive to innovate will decrease when super-normal profit becomes unobtainable.³⁶ If accurate, it would mean that in monopoly structures solely the active monopoly will be incentivised to innovate. In comparison, *Etro* theorised that monopolies tend to hit back and invest more into R&D when their dominant position is threatened.³⁷ *Etro* suggests that without rivals introducing competing products, or at least the threat of doing so, dominant firms would not feel the necessary pressure to invest into the production of new products. However, despite *Etro* implying that a dominant firm is capable of 'hitting back' with further investment in R&D, it still fails to prove that such a monopolistic structure is capable of achieving optimal innovation. The competition authorities have argued that this failure is because optimality is only attainable in perfectly competitive markets.

Open Innovation

Boldrin and Levine believe that only companies which innovate at a fast rate are capable of obtaining and retaining a dominant position in an industry.³⁸ Applying this theory and considering Microsoft's leading position in the software market since the late 1990's,³⁹ even if superseded by a competitor, Microsoft would not be kept out of the race for long before regaining their leading position. As a competitive strategy, firms in the software industry conduct their R&D internally in order to gain a competitive advantage. The consequence of this restriction on the circulation of R&D information is the lack of exploitation of firms' innovative ideas. This process however changed dramatically with the introduction of open innovation, which acts as a 'paradigm that assumes...firms can and should use external ideas as well as internal ideas, and internal and external paths to market, as the firms look to advance their technology'.⁴⁰ This prevents wastage of innovative ideas and advances the market by businesses disclosing their internal ideas. Microsoft has balanced the circulation of their ideas against the retention of other internal ideas which they keep for competitive advantage. This produces vast advantages for fellow competitors and advances economic growth, which suggests that monopolies contributing to open innovation are benefiting the market, even if they retain some internal ideas for their own competitive advantage through exercising their exclusive IPR.

³⁶ Especially in comparison to that in a competitive market, as suggested by Arrow K., 'Economic Welfare and the Allocation of Resources for Invention' in the *Rate and the Allocation of Resources of Invention* (1962) 13 (13) *Cambridge: NBER* p.619.

³⁷ *Etro F.*, 'Market Leaders, Antitrust Policy and the Software Market' (2008) 5 (1) *The Icfai Journal of Industrial Economics* p.17.

³⁸ Boldrin M., Levine K., 'Against Intellectual Monopoly' (2010), 1st ed. Cambridge University Press pp.19-23.

³⁹ Showing its ability to innovate at a fast rate.

⁴⁰ Chesbrough H., *Open Innovation: The New Imperative for Creating And Profiting from Technology* (2005, 1st ed. Harvard Business Review Press) p.24.

3. IMS Health

IMS Health specialises in the consolidation and supply of German regional sales data to pharmaceutical corporations. IMS' database consists of a grid superimposed on the map of Germany which is divided into 1860 geographical areas, known as 'bricks'. The brick structure had evolved by IMS' consumers tailoring it into 'their own information systems and sales structures'.⁴¹ This was problematic for IMS rivals as the brick structure was labelled the de facto industry standard, therefore it needed to be adopted for them to supply their own information. In order to safeguard their investment, IMS requested copyright protection over the brick structure. When NDC applied to IMS for a licence to use their brick structure, it was refused. Later, after further court proceedings, NDC filed a complaint with the EC stating their rights had been breached under Article 82 of the EC. NDC argued that IMS' brick structure was an 'essential facility, without which it could not compete in providing a rival regional sales service'.⁴² Relying on *Magill* and *Bronner* as precedent, the EC held that the 'exceptional circumstances' test was fulfilled in *IMS* and as an interim measure, enforced a compulsory licence on IMS for all companies that aspired to provide German regional sales data.⁴³ IMS appealed to the CFI, which held that the EC had exceeded its powers under these interim procedures and had applied a remedy which was too 'far reaching'.⁴⁴ Furthermore, in later proceedings the EC's interim decision was withdrawn. This ruling yearned for clarity, as despite the interim decision being deemed too extreme, the ECJ did not exclusively answer whether IMS' actions constituted an 'exceptional circumstance'.⁴⁵ In regards to the 'exceptional circumstances' test, *IMS* did not interpret the legal standard laid down in *Magill* and *Bronner*, but instead re-introduced the test as 'cumulative' and applied that a refusal to licence would constitute an abuse of dominance when:

- '1. The product or service protected by copyright...[was]...indispensable for carrying on a particular business; and
2. The refusal prevents the emergence of a new product for which there is potential consumer demand; and
3. The refusal is not objectively justified; and

⁴¹ Houdijk J., 'The IMS Health Ruling: Some Thoughts on its Significance for Legal Practice and its Consequences for Future Cases such as Microsoft' (2005) 6, *European Business Organization Law Review*, p.469.

⁴² Furse M., *Competition Law of the EC and UK* (2006), 5th ed. Oxford University Press, p.397.

⁴³ *IMS Health Inc. (Interim measures)* (2002/165).

⁴⁴ *IMS Health Inc. v Commission* [2002] 4 CMLR 1.

⁴⁵ The withdrawal of the interim measures did not exclude the possibility that the 'exceptional circumstances' test was satisfied, but instead showed the CFI's belief that the EC had overstepped their authority.

4. The refusal is such as to exclude all competition on the secondary market'.⁴⁶

This provided a new legal standard for the exceptional circumstances test, which the court specified was non-exclusive. The ECJ affirmed the test's strictness in identifying abuse and stated 'it is for the national court to examine, if appropriate, in light of the facts before it, whether the refusal of the applied request for a licence is justified by objective considerations'.⁴⁷ This remark however, is too vague and 'far-reaching' to assist national courts and businesses. Until further clarity is provided, it is arguable this process will remain seriously hampered and produce ambiguous results.

Questions Unanswered by the IMS Ruling

What 'constitutes a 'new product' and in which stage of development does this new product have to be...[when]...a court must pass judgement on abuse of a dominant position?'⁴⁸ To introduce a 'new' product, there must be a distinction between the 'new' product and those already active in the market.

In *Magill*, the 'Court did not define what it meant by a 'new product' in highlighting that a refusal prevents the emergence of a new product'.⁴⁹ *Magill* did however illustrate, that in IMS' circumstances, NDC could have claimed originality simply by altering the brick structures' geographical locations. This paved a way for an expansion on the definition of a 'new' product however, no specific guidance was provided for when this was applicable. Without a clear definition, the national court in *IMS* was instructed to consider the volume of participation by the pharmaceutical laboratories in the improvement of the 1860 brick structure. The high dependency on the structure proved that laboratories 'would have to make exceptional organisational and financial efforts in order to acquire a product based on another structure'.⁵⁰ This uncertainty surrounding the 'new product' component was enough for the 'cumulative' test to fail and *IMS* to escape the imposition of a compulsory licence.

When evaluating the 'indispensability' of IPR, the ECJ implied that *IMS* consumers had widely contributed towards the development of *IMS*' IPR. *IMS* explained that the development and improvement of the original product was in response to user feedback.

⁴⁶ *IMS Health Judgment*, para 37.

⁴⁷ *Ibid*, para 51.

⁴⁸ Houdijk J., 'The *IMS Health* Ruling: Some Thoughts on its Significance for Legal Practice and its Consequences for Future Cases such as *Microsoft*', p.485.

⁴⁹ Evrard S., 'Essential Facilities in the European Union: *Bronner* and Beyond', p.12.

⁵⁰ Ramsauer T., 'Just Another Brick? The European Court of Justice on the Interface between European Competition Law and Intellectual Property' p.5, Available: <http://unesdoc.unesco.org/images/0013/001396/139653e.pdf>. Last accessed 6th December 2015.

Competitors and the ECJ suggested IMS users significantly enhanced IMS' success and were too central to the production process for IPR protection. If proven, the ECJ would have held IMS unable to claim independent design of the brick structure. However, IMS argued that whilst providing feedback, the users were not directly involved in the development process and ultimately could not have contributed to IMS's success to any significant degree. If the former approach was adopted, it would have been problematic because it requires the Courts to identify when IPR holders have received too much assistance from third parties, which is arguably immeasurable. Considering this difficulty, the court instead observed that IMS' product was improved to suit the requirements of their users, in order for consumers to adopt their own system to fit within the IMS system. Hence, the development of indispensability became apparent over time when it was identified that the pharmaceutical industry had a degree of dependency on the structure and no production of an alternative product was viable.⁵¹ As such, it is implied that NDC should have had little difficulty proving this condition of indispensability.

The Interface between Competition Law and IP Law

The 'most' significant difference between *Magill* and *IMS* is the requirement for a 'new product' (in *IMS*). This interprets as 'the ECJ employing a strict demarcation for the application of competition law to the exercise of IPR and that the *IMS* ruling confirms a far-reaching autonomy of (the exercise of) IPR.'⁵²

When the ECJ declared that the 'exceptional' conditions introduced in *Magill* were successful in *IMS*, this raised concern for IP lawyers because the application of this test was deemed appropriate in the primary 'and' secondary markets. To understand the true gravity of IP lawyers' concern, it is essential to explain that secondary markets produce products that are solely purchased as a result of consumers buying products in the primary market.

AG Tizzano set out:

'...that, for the purposes of the application of...earlier case-law, it is sufficient that a potential market or even hypothetical market can be identified. Accordingly, it is determinative that two different stages of production may be identified and that they are interconnected, inasmuch as the upstream product is indispensable for the supply of the downstream product'.⁵³

Applying this concept to *IMS*, the brick structure would constitute as an indispensable upstream factor in the downstream supply of German regional sales data for pharmaceutical

⁵¹ This was apparent considering no structure could match the sophisticated developments made in *IMS*, as expressed by Colston C., Middleton K., *Modern Intellectual Property Law* (2005) 2nd ed. Routledge Publishing, p.103.

⁵² Houdijk J., 'The *IMS* Health Ruling: Some Thoughts on its Significance for Legal Practice and its Consequences for Future Cases such as *Microsoft*', p487.

⁵³ *IMS Health Judgment*, para 44.

products. It is the economic perspective that IPR holders will be more lenient to licence their IPR in a secondary market, since this market would not affect their core activities on the primary market. However, enforcing compulsory licences in both primary and secondary markets under *IMS*' criteria could have a significant impact on IPR holders' return in investment. The court uses the 'introduction of a new product' condition to ensure competitors applying for a licence to IPR never end up in direct competition with the IPR holder. It is intended for competitors to keep a certain distance from the IPR holders and ultimately form their own submarket. For this to be achieved, the product or service must be classified as 'new' in terms of supply and demand to ensure competitors applying for a licence are in a distinct market to the IPR proprietor. This interpretation should prevent IPR holders being threatened by the enforcement of compulsory licences in the primary market.

Conversely, there is conjecture that where a truly derivative market exists, a less stringent application for the demand of the newness of a product or service may be required to satisfy this condition. The drawback to encouraging such an approach is that it diminishes the clarity of the criteria. To project legal certainty this criteria requires consistent interpretation. If consistency is unobtainable through this test, it is arguable that the market is desperate for a new approach.

The Validity of IMS' Test

IMS relates to the interface between competition and copyright law. As such, its ruling is not explicitly directed on the clash between competition policy and all types of IPR. Consequently, it may be interpreted that *IMS*' conditions are not sophisticated enough to resolve the complex situations between competition and IP law as a whole. Attempting to clarify this issue, it is necessary to identify situations where *IMS*' criteria is not fulfilled but the courts still find an abuse of dominance under Article 102 of the TFEU.

Abusive behaviour is apparent where an undertaking possesses IPR for the production of certain components and decides to cease the production of such goods, and refuse a licence to competitors which intend to satisfy the existing demand in the market. 'This is a slightly different criterion than the standard of impeding the introduction of a new product, formulated in *IMS*, but boils down to the same...[principle that in]...both cases, consumers would be denied a product for which a demand exists'.⁵⁴

⁵⁴ As suggested by Houdijk J., 'The IMS Health Ruling: Some Thoughts on its Significance for Legal Practice and its Consequences for Future Cases such as Microsoft', p.490.

Another alternative interpretation of the 'exceptional circumstances' test is needed for the software industry. Granting the disclosure of limited information will depend on the basis of whether the competitor intends to use this information to produce its own well-functioning software product, or, for their ambition to use the IPR holders' exclusive grip on the market. Thus, to restrict competitors from producing an identical replica of IPR holders' original product, the courts must include this consideration in the 'exceptional circumstances' test.⁵⁵

It has also been questioned whether combining the elimination of production and monopoly leveraging factors within *IMS*' test is appropriate. AG Tizzano endorsed the view that a refusal to licence constitutes an abuse only in extreme and 'cumulative' circumstances. However, post-*IMS*, critics have submitted that the 'refusal to exclude all competition in the secondary market' component constitutes two independent types of abuse.⁵⁶ 'If the quality of the products offered on the neighbouring market are equal and if innovative efforts are constantly made, a new product that is not offered...[to competitors]...by the IP owner constitutes abuse of a dominant position because one condition, i.e. the limiting-of-production test' would be unfulfilled.⁵⁷ It is considered that perhaps 'in the not too distant future, exceptional circumstances in which competition law intervention is justified will no longer be the empirical exception but the daily bread of competition policy'.⁵⁸ Evidenced by the scenarios above, it is clear that the approach adopted in *IMS* is not appropriate for identifying all circumstances where an abuse of a dominant position may arise. Therefore, the implementation of a stricter economic approach could be argued as necessary to allow more competitive intervention. However alternatively, the European authorities could reject this motion for more competitive intervention, and instead focus on achieving a balance between these conflicting tools.

4. The 'Exceptional Circumstances' Test

The courts' gradual shift towards issuing compulsory licences could be described as its inclination to prioritising European competition policy above IP law. Initially, the court focused on the 'economic right of the innovator to receive appropriate remuneration'.⁵⁹ In

⁵⁵ Microsoft's justification for refusing to grant SM a licence was the concern SM would identically replicate their "crown jewels" (Windows' Sourcing Codes). Therefore, under this standard, the EC's 2004 *Microsoft* ruling should have included this consideration.

⁵⁶ The leveraging condition requires two distinct markets whereas eliminating production concerns only one independent market.

⁵⁷ Heinemann A., 'Compulsory Licences and Product Integration in European Competition Law - Assessment of the European Commission's Microsoft Decision', (2005) 36(1) IIC, p.73.

⁵⁸ Atanasiu I., Ehlermann C., 'European Competition Law Annual 2005: The Interaction between Competition Law and Intellectual Property Law' (2007) 1st ed. Bloomsbury Publishing, p.664.

⁵⁹ Angelov M., 'The "Exceptional Circumstances" Test: Implications for FRAND Commitments from the Essential Facilities Doctrine Under Article 102 TFEU' (2014) 10 (1) *Euro. C.J.*, p.64.

Volvo, the courts held ‘the right of the proprietor of a protected design to prevent third parties from manufacturing...selling or importing without consent...[as]...the very subject-matter of his exclusive right’.⁶⁰ Therefore *Volvo*’s ‘very subject-matter’ approach prioritised IP over EU competition law issues. *Magill*’s⁶¹ introduction of the ‘exceptional circumstances test’ arguably altered this balance, tilting the scale towards the prioritisation of European competition law.

The Importance of Achieving a Balance between the Two Regimes

Prior case-law has insisted that the court must decide on either the supremacy of IPR or competition law. This is arguably a flawed approach considering the complexity of this interfacing dispute. As such, striking ‘a balance between the anti-competitive and pro-competitive effects of a refusal to licence...and incorporating considerations of both allocative and dynamic efficiency’, could be a more practical remedy.⁶²

IPR and competition law share the common goal of advancing consumer welfare and, as such, both include considerations for allocative and dynamic efficiency.⁶³ The distinction between these two regimes is the different degree of emphasis placed on these separate efficiencies. Allocative efficiency requires effective production and lower prices on goods and services, which is the primary focus of competition law. In contrast, dynamic efficiency aims to produce the newest and highest quality goods and services through protecting IPR holders’ incentives to innovate, which is the primary concern of IP law. To resolve the conflict between these two laws a balance struck between allocative and dynamic efficiency is crucial.

Pre-existing Literature

This balancing approach between anti-competitive and pro-competitive effects was acknowledged by the US courts, which formed an open-ended balancing exercise under Section 2 of the Sherman Act 1890 to apply on a case-by-case basis. The EC developed an alternative approach to the US’s exercise,

‘which gives enforcement priority to conduct leading to anti-competitive foreclosure of competitors, subject to the incumbent’s right of ‘justification’ by demonstrating that its

⁶⁰ *Ibid* at para 19.

⁶¹ *Magill (RTE and Independent Television Productions v Commission)* [1995] 4 CMLR 418.

⁶² Kwok K., ‘A New Approach to Resolving Refusal to License Intellectual Property Rights Disputes’ (2011) 34 (2) *World Competition Law and Economics Review*, p.261.

⁶³ As suggested by Pepperkorn L., ‘IP Licences and Competition Rules: Striking the Right Balance’ (2003) 26, *World Competition Law and Economics Review*, p.527.

conduct produces substantial efficiencies which outweigh any anti-competitive effects on [the] consumer'.⁶⁴

In *Microsoft*,⁶⁵ this approach was adopted to consider whether Microsoft's incentives to innovate could constitute an 'objective justification', which outweighs any anti-competitive impact Microsoft have on the industries' as a whole. The EC identified that there are specific limitations to balancing these concepts on incentives.

First, this test excluded consideration of allocative efficiency and instead focused solely on dynamic efficiency, concentrating on the adverse effects of Microsoft's incentive to innovate along with the advancements in dynamic efficiency which increases follow-on innovation for the whole industry. However, this only considered the short-term effects of issuing Microsoft with a compulsory licence and neglected to consider the long-term impact on competitors. Consequently, this balancing process will systematically over-emphasise the benefits of mandatory access and under-emphasise the benefits of protecting the IPR holder's incentives to invest. Although this test was rejected in the later Microsoft case,⁶⁶ it was stressed that this decision was based on the invalidity of the argument provided by Microsoft (the cloning of their software), and not the EC's direct disapproval of this balancing process regarding innovation.⁶⁷ The EC's ruling contributed to 'a new level of uncertainty, based partly on its attempted micromanagement of competition on a case-by-case basis'.⁶⁸ Turney supports this conclusion by stating that 'it is tempting to treat the essential facilities dilemma on a case-by-case basis. However, this uncertainty is particularly problematic for market participants and does nothing to ensure the coherence of a competition regime'.⁶⁹

In contrast, Kaplow has proposed a sophisticated framework balancing the differing objectives of competition law and patent policy, i.e. essentially assessing the 'trade-off between patentee reward and innovation incentives'.⁷⁰ Kaplow submits that IP practices, including the refusal to licence, should be permitted if the resulting profits outweigh the harm

⁶⁴ Kwok K., 'A New Approach to Resolving Refusal to License Intellectual Property Rights Disputes', p.271.

⁶⁵ *Microsoft Corpn v Commission* [2004] ECR 2977.

⁶⁶ Rejected by the EGC (General Court), which prior to the execution of the ToL was called the CFI (Court of First Instance).

⁶⁷ *Microsoft v Commission* [2007] ECR 3601, para 710.

⁶⁸ Byrne D., 'Compulsory licensing of IP rights: has EC competition law reached a clear and rational analysis following the IMS judgement and the Microsoft decision?' (2007) 2 (5) *J.I.P.L.P.*, p.324-330.

⁶⁹ Turney J., 'Defining the Limits of the EU Essential Facilities Doctrine on Intellectual Property Rights: The Primacy of Securing Optimal Innovation' (2005) 3 *North-western Journal of Technology and Intellectual Property*, p.187. Also criticised by Ahlborn C., Evans D., Padilla A., 'The Logic & Limits of the "Exceptional Circumstances Test" in Magill and IMS Health', p.1156: 'A case-by-case test, like the Commission's test in Microsoft, constitutes...an invitation to error'.

⁷⁰ Kaplow L., 'The Patent-Antitrust Intersection: A Reappraisal' (1984) 97 *Harv. L. Rev.*, p.1813.

suffered.⁷¹ Completely restricting IP practices goes against the underlying assumption that increasing reward to the patentee 'in turn encourages inventive activity, which in turn produces social benefits'.⁷² This led Kaplow to design a 'ratio test' for when the competition authorities should intervene.⁷³ However, it was deemed impossible to produce ratios for every patent practice that exists considering the lack of information provided by the companies to base the ratio. As such, instead of attempting to produce a quantitative analysis of the ratio, it was considered more appropriate to produce a qualitative approach 'to prohibit at least those practices that exhibit a serious potential for substantial loss'.⁷⁴ 'Factors aiding in the application of this test to specific practices, include the extent to which the reward is pure transfer, the portion of the reward that accrues to the patentee, and the degree to which the reward serves as an incentive'.⁷⁵

However, there is the concern that these three factors refer to patentee reward, which is difficult to quantify with regards to Article 102 practices.⁷⁶ In such practices, long-term rewards can only be achieved when the monopoly has driven out competitors and can earn super-normal profits through the increase in pricing. Grimes and Sullivan suggested that patentees who acquire monopoly power through anti-competitive practices, especially the refusal to licence, will not enjoy their riches for long considering their tendency to squander them through productive inefficiency.⁷⁷ Therefore, when applying Kaplow's ratio test, it could be deemed more appropriate to directly examine the balance between incentives to innovate and monopoly loss, instead of focusing on the complicated concept between patentee reward and incentives to innovate. This alternative qualitative approach could prevent further complications arising in Kaplow's ratio balancing test.

Contrastingly, Crane rejected Kaplow's analysis, arguing that enforcing compulsory licences would coerce unwilling business relationships. Crane's submission could be deemed to over-

⁷¹ Therefore balancing the patentee benefits against the cost of patent protection, i.e. the decrease in allocative efficiency through an increase in prices and decrease in output.

⁷² Kaplow L., 'The Patent-Antitrust Intersection: A Reappraisal', p.1823.

⁷³ He explained that if the patentee reward ratio is measured over the monopoly loss and the ratio exceeds one, the competition authorities should not intervene.

⁷⁴ Kaplow L., 'The Patent-Antitrust Intersection: A Reappraisal', p.1888.

⁷⁵ *Ibid*, p.1842.

⁷⁶ It is therefore questionable whether these three factors are solely applicable to Article 101 of the TFEU agreements, or if they can extend to Article 102 of the TFEU practices.

⁷⁷ Grimes W.; Sullivan L., 'The Law of Antitrust: An Integrated Handbook' (2006), 2nd ed. West Academic Publishing, p.84. This view may be contradicted in scenarios where the patent relates to the production process itself. However, for all other circumstances it was suggested that the 'possession of unchallenged economic power deadens initiative, discourages thrift and depresses energy...[and]...that immunity from competition is narcotic, and rivalry is stimulant to industry progress', as per Judge Hand in *United States v Aluminium Co of America* (1945) 148 F.2d 416, 427 (2nd Cir).

estimate the amount of interaction compulsory licences force on the parties involved, especially considering *Microsoft* suggested this exchange is kept to a minimum.⁷⁸ However, this is arguably different in patent cases, since despite compulsory licencing allowing competitors to work the patented invention without risk of infringement, it would not necessarily enable them to work it in the most efficient or effective way⁷⁹. This is because working a patented invention often requires unpatented “know-how” and skilled personnel. As such, voluntary patent licences are commonly accompanied by extensive agreements relating to disclosure of “know-how” and training of personnel; emphasising Crane’s point that compulsory licences are unlikely to produce optimal outcomes in this context.⁸⁰ Crane emphasised that the exclusive IPR of refusing a licence interacts with circumstantial factors.⁸¹ Crane’s theory explained how Kaplow’s ratio test in refusal to licence cases ‘decreases with the number of aggravating circumstantial factors. Consequently his...[study]...emphasised that the anti-competitive effects may eventually outweigh the pro-competitive effects of allowing the refusal’.⁸²

This pre-existing literature gives important insights, which must be reflected on prior to adopting a new framework. The potential effects a refusal to licence will have on consumer welfare and the different efficiencies must be examined. It is also vital for competition authorities to balance the pro and anti-competitive effects of a refusal to licence. In order to fulfil the latter condition these ‘effects’ must first be acknowledged. Anti-competitive effects include restricting a new rival entering the market or excluding a pre-existing competitor, which inadvertently results in allocative inefficiency and can potential decrease follow-on innovation. Alternatively, the pro-competitive justification for permitting a refusal to licence stems from the principle of preserving participants’ incentives to innovate. Ironically, when reflecting on these competitive effects, it implies that the more successful a firm’s innovation is, the more likely it will be considered anti-competitive and subject to compulsory licencing. As such, this identifies why increasing compulsory licencing will decrease firms incentives to innovate.⁸³

⁷⁸ I.e. the competition authorities determine the licensing fee for the information provided and appoint a monitoring trustee to ensure payments are transferred.

⁷⁹ When obtaining a patent, the inventor is required to disclose their invention in the patent application, which then becomes a public document. Competitors gain access to this information contained in the patent application, but they are prevented from working the invention without the permission of the patent owner, for the duration the patent exists.

⁸⁰ As per Hovenkamp H., Janis M., Lemley M., ‘Unilateral Refusals to License in the US’, *Antitrust, Patents and Copyright – EU and US perspectives* (2005) 1st ed. Edward Elgar p.34.

⁸¹ Crane D., ‘Intellectual Liability’ (2009) 88 *Texas Law Review*, p.253.

⁸² Kwok K., ‘A New Approach to Resolving Refusal to License Intellectual Property Rights Disputes’, p.273.

⁸³ Because the more money firms invest in R&D ultimately means the more super-normal profit eliminated by compulsory licences.

Finally, a new framework must assess the links of causation. I.e. (i) does the refusal: 'in fact, lead to the likely exclusion of a competitor; (ii) [does the]...exclusion [actually] aggravate...[allocative and dynamic]...inefficiency; and (iii) [is it] the right to exclude under IPR protection [which actually]...drives innovation in the industry at issue'.⁸⁴

Striking the Balance

Crane's analysis indicated that authorities will consider refusals to licence as anti-competitive when the amount of aggravating factors present increases. Therefore, a new approach to resolve the conundrum between European competition law and IPR could be formed by identifying how the refusal at issue interacts with various circumstantial factors.⁸⁵

A non-exhaustive list of aggravating factors has been developed through case-law to identify what anti-competitive effects a refusal to licence can produce, consisting of: (A) market power; (B) network effects; (C) monopoly leveraging; (D) predatory intent; (E) degree of follow-on innovation. Overall these factors identify the anti-competitive effects of a refusal to licence by reflecting on the entry barriers for competitors (A-D) and the amount of allocative and dynamic inefficiency which is predicted from this restriction and exclusion (E).⁸⁶

If a refusal to licence is concluded as being anti-competitive under these factors, it must be compared against the pro-competitive justification provided by the parties.⁸⁷ Determining whether such a justification can outweigh the anti-competitive impacts of a refusal will depend on the link between the protection of IPR and the incentives to innovate. The complexity of this proposed framework suggests that these concepts are scrutinised differently depending on the industries involved.⁸⁸

Aggravating Factors

A. What relevant market does the competitor fall into? In refusal to licence cases, the European competition authorities developed a two-market approach where 'a monopolist

⁸⁴ Kwok K., 'A New Approach to Resolving Refusal to License Intellectual Property Rights Disputes', p.274.

⁸⁵ Suggested by Kwok K., 'A New Approach to Resolving Refusal to License Intellectual Property Rights Disputes'.

⁸⁶ The first four aspects refer to barriers which restrict or exclude access to the market for new competitors or existing rivals, whereas the degree of follow-on innovation (e) refers to the aftermath of this exclusion.

⁸⁷ Typically justifications are aimed at motivating parties' incentives to innovate.

⁸⁸ Turney emphasised that assessing the anti-competitive effects on a case-by-case basis produces irregularity however examining cases on an industry-by-industry basis could provide much needed clarity in this application. The following section analyses these aggravating circumstantial factors and the IPR-incentives relationship in reflection of pre-existing case-law.

who acquires a dominant position in one market through...[IPR]...exploits that dominant position to enhance a monopoly in another market'.⁸⁹ The authorities designed an approach differentiating the two markets: 'an upstream market for the input refused and a downstream market for the end product incorporating that input'.⁹⁰ Case-law showed that this definition of a relevant market produced complications, i.e. *Microsoft* implied that the only relevant market in this two-market approach is 'the end product market'.⁹¹

'Market definition for goods protected by patents or other...[IPR are]...usually determined by the characteristics of the good itself...[therefore]...the nature of the products, the demand for them, and the relative ease of supply'.⁹² Such an analysis of the parties' characteristics should help identify which market is appropriate for the competition authorities to consider in light of anti-competitive activities.⁹³ Once a relevant market has been established, it must then be assessed how much power the IPR holder has acquired in that market. *Microsoft* suggested that in order to calculate the monopoly's market power, it must be identified whether their IPR are 'indispensable' in the end product market.⁹⁴ To determine the indispensability of a product, the 'as-efficient competitor test' was formed identifying which competitors' appeals should be dismissed in light of IPR holders' refusal to licence.⁹⁵ The competition authorities explored whether, by granting the licence, the competitors could compete effectively against the IPR holder considering their superior position in the market. Indispensability increases in parallel with the chances of the competitor being restricted or eliminated from the market, therefore the higher the chance of restriction or elimination, the more significant the anti-competitive effects of the refusal.

The 'as-efficient competitors test' could have been used in *Magill* because the publishing company would have been 'unable to produce' their end-product without the granting of the licence. Contrastingly, in *IMS*, NDC did not require their brick structure to obtain working contracts with other companies therefore it was not indispensable to their end-product

⁸⁹ *Image Technical Services Inc. v Eastman Kodak Co* [1997] 125 F.3d 1195 9th Cir, 1215-1216.

⁹⁰ Kwok K., 'A New Approach to Resolving Refusal to License Intellectual Property Rights Disputes', p.275.

⁹¹ Its significance was based on the fact that parties' are competing for this 'end market' to produce their product.

⁹² Hovenkamp H., Janis M., Lemley M., 'Chapter 4: Intellectual Property and Market Power', in *IP and Antitrust: An Analysis of Antitrust Principles Applied to Intellectual Property Law* (2002) 1st ed. *New York: Aspen Law & Business*, p.4-44.

⁹³ I.e. *Microsoft's* product markets were recognised as the server OS 'and' applications software market, and the pharmaceutical sales reports market was identified for *IMS*.

⁹⁴ This is necessary to identify because, in the absence of compulsory licencing, competitors may be restricted or eliminated from the industry due to there being no available substitute.

⁹⁵ As advocated in *Bronner (Oscar) v Mediaprint*, paras 45-46.

market. As such, refusal to licence cases should be assessed in light of the 'as-efficient standard' before any action is taken by the competition authorities.

B. Microsoft is a prime example of an industry characterised by both direct network effects and indirect network effects.⁹⁶ Market tipping 'occurs when one firm has attracted a critical mass of consumers and complementary applications, forcing other competitors to leave the market',⁹⁷ and results in consumers being reluctant to change software companies.⁹⁸ Even if consumers of the monopoly were willing to change company for the improved product, 'the entrant may have to offer a deal that is considerably better than the value of the improvement'.⁹⁹ Also despite this superior deal proving to be successful in the short-run, it could increase the monopoly's incentive to further innovate and create improvements more advanced than their rivals.¹⁰⁰ This would tighten their grasp on the industry, providing monopolies with further opportunities to use network effects as a restrictive measure for future competitors.

'Since...a product with huge network externalities is already protected against competition through its natural monopoly characteristics, IPR might be generally less important for providing innovation incentives'.¹⁰¹ Consequently, European competition authorities should perhaps intervene more frequently in these circumstances, especially where the direct and indirect effects are acting as barriers to the market.¹⁰²

⁹⁶ Direct network effects arise from the increasing attractiveness of a product parallel with demand. Indirect network effects accompany consumers' expanding interest in the product with additional complementary products and applications.

⁹⁷ *Microsoft Corpn v Commission* [2004] ECR 2977, para 420, n. 536 – 'A product market is said to exhibit network effects when the overall utility derived by consumers who use the product in question is dependent not only on their private use of the product, but also on the number of other consumers who use the product. Such a network effect is a direct network effect. An indirect network effect occurs when the value of a good to a user increases as the number and variety of complementary products increase'.

⁹⁸ As when forcing competitors to leave the market, Microsoft have restricted other competitors entering the market by 'increasing [the] number of consumers...locked into a homogenous Windows solution', which of course makes consumers unlikely to change software companies and welcome new competitors to the market. As discussed by Paradolesi R., Renda A., 'The European Commission's Case against Microsoft: Kill Bill?' (2004) 27 *World Competition Law and Economics Review*, p.513, 527.

⁹⁹ I.e. the competitor entering the market must be substantially superior to the improved product or service presented by the IPR holder active on the market. As implied by: Scotchmer S., 'Innovation and Incentives' (2004) London: The MIT Press, p.296.

¹⁰⁰ As per Etro F., 'Market Leaders, Antitrust Policy and the Software Market', p.17.

¹⁰¹ Kerber W., Schmidt C., 'Microsoft, Refusal to License Intellectual Property Rights, and the Incentive Balance Test of the EU Commission' (2008) Faculty of Business Administration and Economics, Philipps Universität Marburg, Am Plan 2, D-35032 Available: http://extranet.isnie.org/uploads/isnie2008/kerber_schmidt.pdf. Last accessed 6th December 2015.

¹⁰² As demonstrated in *Microsoft*. In *IMS*, there was less of a concern regarding these network effects because NDC was not restricted and the software consumers were not discouraged from changing servers, unlike in *Microsoft*.

C. This aggravating factor is established when monopolies use their 'power attained in one market to gain a competitive advantage in another',¹⁰³ which can result in anti-competitive effects. O'Donoghue and Padilla suggested that these situations fit into two categories.¹⁰⁴ Firstly, 'where an abuse occurs in an upstream dominant market but anti-competitive effects are felt in a downstream market' where the monopoly is not necessarily dominant and secondly where the markets are horizontally integrated.¹⁰⁵ In the latter, a monopoly in one of the two linking markets has the opportunity to gain 'a dominant position on the markets in question as a whole'.¹⁰⁶ The EC held *Microsoft* as a prime example of this aggravating factor¹⁰⁷, which assisted in their ruling to enforce a compulsory licence.¹⁰⁸

D. In *AKZO*, the ECJ linked a predatory intention to the fact that AKZO's prices were 'part of a plan for eliminating a competitor'.¹⁰⁹ If the monopoly indicates 'a willingness to forsake short-term profits to achieve an anti-competitive end',¹¹⁰ this constitutes a predatory intent.¹¹¹ It is evident that through objectively evaluating monopoly conduct, predatory intent can act as another entry barrier to a market.

E. Follow-on innovation assesses whether the restriction or exclusion of competitors has caused any dynamic 'inefficiency'. 'The greater the creativity or improvement...[of the excluded competitors],...the more significant the follow-on innovation...to be foregone by allowing the...[monopolists]...refusal and, hence, the more substantial the anti-competitive

¹⁰³ Ehlermann C., Gosling L., 'European Competition Law Annual 1998: Regulating Communications Markets' (2000) 1st ed. Oxford: Bloomsbury Publishing PLC, p.239; also stated in *Berkley Photo v Eastman Kodak Co* [1979] 603 F. 2d 263 (2d Cir).

¹⁰⁴ O'Donoghue R., Padilla A., 'The Law and Economics of Article 102' (2006), 1st ed. Oxford: Hart, p.211–213.

¹⁰⁵ As per Kwok K., 'A New Approach to Resolving Refusal to License Intellectual Property Rights Disputes', p.279.

¹⁰⁶ *Tetra Pak International SA v. Commission* [1996] ECR 5951, paras 28 and 31, as noted in *O'Donoghue & Padilla*, 212.

¹⁰⁷ Microsoft's leveraging techniques: '(i) most organizations purchased both client OS and server OS; (ii) most customers of server OS ran Windows on their client PCs; (iii) Microsoft was active in both client OS and server OS...; and (v) technological links such as network effects existed between the two products' - Kwok K., 'A New Approach to Resolving Refusal to License Intellectual Property Rights Disputes', p.279.

¹⁰⁸ It is likely that a monopoly, increasing their market power in a secondary market through leveraging, is going to place limits on other competitors and eventually exclude them from the industry entirely. This will therefore act as an aggravating factor under these two categories which will exacerbate anti-competitive effects in refusal to licence cases.

¹⁰⁹ It is for the competition authorities to assess whether conduct (such as adjustments to pricing) is intended to eliminate competition, as discussed by *AKZO Chemie BV v Commission* [1991] ECR 3359, para 72.

¹¹⁰ I.e. driving competitors out of the market which cannot afford to compete at these lower prices, as per *Verizon Communications v. Law Offices of Curtis V. Trinko*, 540 US 398 (2004), para 409.

¹¹¹ Under Professor Baumol's price reversal rule it would be deemed a price predatory 'if it forced a rival to leave the market and the predator thereafter reversed the price cut within the next several years': as per Bolton P., Brodley J., Riordan M., 'Predatory Pricing: Strategic Theory and Legal Policy' (2000) *Law and Economics Working Paper No. 99-5*, p.16.

effects'.¹¹² O'Donoghue and Padilla designed a consumer demand test measuring the amount of follow-on innovation, stating that a:

'new product B expands the market by bringing in consumers that were not interested in the product A,...but it would not be [new] if products A and B competed head-to-head for the same set of consumers'.¹¹³

This test requires the market's consumers to judge whether it has been fulfilled. However, considering these measures are only conclusive following the product's introduction to the market, this test may be considered too late by many commentators.¹¹⁴

F. The Line between the Protection of IPR and Incentives to Innovate:

It has been established that the most common justification for a refusal to licence is to motivate IPR holders' incentives to innovate. This reasoning was rejected in *Microsoft* because their protected IPR had 'no causal link' to the industry's incentives to innovate. Reflecting on *Microsoft's* ruling, as well as the few innovative firms left in that industry, commentators are concerned about the negative impact compulsory licencing will have on the industry's future inventive activity. This strongly echoes Schumpeter's view that IPR must be defended, as competition policies command a decisive cost of quality advantage which strikes at the foundation of IPR and acts as a 'perennial gale of creative destruction'.¹¹⁵

Critics endorsed Schumpeter's view on the grounds that it identifies how 'industries...vary too much for one theory to fit all'.¹¹⁶ Similar to Schumpeter's view and Crane's industry-based assessment, Carrier designed an approach assessing the link between the protection of IPR and incentives to innovate. Carrier's method depends on three factors, the markets': primary incentives, degree of dependence on IPR and category of innovation (i.e. whether a complex or discrete nature)¹¹⁷.

¹¹² Kwok K., 'A New Approach to Resolving Refusal to License Intellectual Property Rights Disputes', p.282.

¹¹³ O'Donoghue R., Padilla A., 'The Law and Economics of Article 102' (2006) 1st ed. Oxford: Hart, p.447-448.

¹¹⁴ Leveque F., Shelanski H., 'Antitrust, Patents and Copyright: EU and US Perspectives' (2005) 1st ed, Cheltenham: Edward Elgar Publishing, p.106.

¹¹⁵ Schumpeter J., 'Capitalism, Socialism, and Democracy', p.84.

¹¹⁶ Carlton D., Gertner R., 'Intellectual Property, Antitrust and Strategic Behaviour' (2003) Volume 3, Innovation Policy and the Economy, Available: <http://www.nber.org/papers/w8976>. Last assessed 6th December 2015.

¹¹⁷ Carrier M., 'Unraveling the Patent-Antitrust Paradox' (2002) 150 *University of Pennsylvania Law Review*, pp.761, 818–833.

Conclusion:

It has been proven that Microsoft possesses significant market-based incentives including network effects and first-mover competitive advantages.¹¹⁸ Additionally, and in contrast to IMS' innovations,¹¹⁹ Microsoft's products appear to be relatively easier to produce and not as easy to replicate. Applying Carrier's industry-based assessment, it is identified that the anti-competitive effects of Microsoft's refusal to licence far outweighed its pro-competitive effects.¹²⁰ This could have been presumed considering the software industry is known for its continuous game-changing innovations. In contrast, the pharmaceutical industry presents relatively discrete inventions to improve their original system.¹²¹ As such, if *IMS* was judged through Carrier's analysis, the outcome would have been more difficult to assess than in *Microsoft*. This indicates that facilitating an industry-based approach could result in false 'convictions', which may inadvertently cause other anti-competitive activities.¹²² Furthermore, to fulfil the three components of Carrier's test, every industry considered would be placed under the magnifying glass by the authorities'.¹²³ This would ensure that an extensive evaluation of the firm's industry was conducted to identify its innovative features prior to any ruling, providing a degree of administrability to the interface between competition policy and IPR. The concern with this application is that the test neglects to consider the impact these anti-competitive practices have on consumers. By solely focusing on the innovative side of the argument, as is implied, the courts may accidentally ignore this consideration. If so, it should be noted that Carrier's approach only achieves a degree of administrability by oversimplifying the conflict in question.¹²⁴

Alternatively, Kaplow's proposed framework provides a more thorough analysis of the industries and remains the most sophisticated device when resolving the interface between

¹¹⁸ Evidenced in *Microsoft Corp v Commission* [2004] ECR 2977.

¹¹⁹ Evidenced in *IMS Health Judgment*, where NDC was able to replicate IMS' brick structure without being granting a licence.

¹²⁰ As such, Carrier M., 'Unraveling the Patent-Antitrust Paradox', pp.761, 818–833 supports the court's analysis in *Microsoft*.

¹²¹ IMS's brick structure made the original product easier to distribute and the system easier to navigate. Considering how long their original product took to form, the industry is less likely to undergo the cost of creating an entirely new product when improving the original invention is still an viable option.

¹²² I.e. agreements to collude: Cass R., Hylton K., 'Preserving Competition: Economic Analysis, Legal Standards and Microsoft' (1999) 8 (1), *George Mason Law Review*, pp.31-32.

¹²³ Carried out by the Chief Competition Economist Office within the Commission. For more detail explanation see Gavill A., *The Challenges of Economic Proof in a Decentralised and Privatised European Competition Policy System: Lessons from the American Experience* (2007) 4, *Journal of Competition Law and Economics*, pp.177,183.

¹²⁴ Therefore proving to be insufficient in practice, as identifying what type of innovation exists in an industry does not make the potential consumer harm of these anti-competitive practices any less significant.

competition law and IPR.¹²⁵ When examining Kaplow's ratio test in section four, two omissions in its framework were identified. Firstly, the lack of guidance on how the relationship between IPR rewards and innovation incentives should be applied in the analysis. Second, the test does not consider in enough depth how the anti-competitive behaviour hinders cumulative innovation, nor its importance to the market.

In respect of the former omission, Kaplow's interpretation is that permitting anti-competitive behaviour can increase IPR holders' return in super-normal profits, thereby increasing the amount of investment placed in innovation, which improves consumer welfare and economic growth.¹²⁶ However, the concerning aspect of this chain of causation, is how can the court identify whether the IPR holders' supernormal reward has provided an incentive to innovate?¹²⁷ With regard to the latter omission, cumulative innovation has been identified as a driver of technological development. Therefore, if there is a loss in cumulative innovation, this signifies an IP cost, which must be integrated into the ratio to provide a superior analysis for the industry. Without this concept being considered in Kaplow's analysis, it is arguable that no successful or permanent balance is obtainable.

An alternative temporary process to Kaplow's approach could be the introduction of a 'fundamental premise'...that innovators will continue to produce innovations as long as their innovation costs are fully compensated'.¹²⁸ This premise would allow courts to concentrate more directly on advancing consumer welfare without impairing the IPR holders' incentives to innovate. Similar to the proposal illustrated by Schumpeter, this process would cause innovators (IPR holders) to undertake R&D. As per Schumpeter's proposal, by inducing firms to innovate, the competition authorities need to accept the potential consequence in 'the creation of monopolies as a necessary evil'.¹²⁹ This interpretation does not mean that competition authorities should be prevented from interfering in the management of IPR, however it does present an element of restriction placed on their involvement.

¹²⁵ Kaplow L., 'The Patent-Antitrust Intersection: A Reappraisal'.

¹²⁶ Kaplow presented this link as a valid chain of causation between IPR rewards and innovative incentives.

¹²⁷ It is implied that the competition authorities' understanding of the link between IP reward and innovative incentives has developed since the implementation of Kaplow's approach. Therefore, instead of simply considering the IP reward, the authorities now appear to assess whether the allocative inefficiency produced by permitting anti-competitive practices provides social benefits in another form (i.e. dynamic efficiency).

¹²⁸ Cheng T., 'Innovation Incentives Back in the Patent-Antitrust Interface' (2013) 11 (5), *North-western Journal of Technology and Intellectual Property*, p.439.

¹²⁹ Schumpeter J., 'Capitalism, Socialism, and Democracy', p.84.

Although Carrier's approach proves to have various positive attributes, it refuses to consider a fundamental conflict between these two areas of law. Therefore, it is unlikely its application would produce a fully formed balance. Kaplow's approach has been identified as the most sophisticated proposal in terms of striking a balance between competition policy and IPR, however, until the omissions in its processes are rectified, a fully workable balance will also be unattainable within its framework, despite it having the most potential.

The other frameworks introduced, which instead focus on 'how' a refusal to licence interacts with different aggregated circumstantial factors, have presented an opportunity for a balance between competition and IP law.¹³⁰ However, considering this proposal has only been applied theoretically, it would be unadvisable to adopt as the new legal standard in this conflict, at least until it has been successfully applied in practice.

In the absence of that ideal, and for the substantial reasons advanced above, the 'fundamental premise' between innovators and the competition authorities will help to permit a temporary resolution, achieving optimal consumer welfare and economic growth in the short-term. Although there is a general confidence that, in time, a balanced approach to the IP-competition law interface will emerge, further analysis and practical application of these separate (and possibly new) approaches is crucial before any definitive answer is provided regarding 'which approach is superior'.

¹³⁰ Kwok K., 'A New Approach to Resolving Refusal to License Intellectual Property Rights Disputes'.