



FACULTY OF LAW
University of Lund

Ela Skorupska

Definition of the Relevant Market
according to the Technology
Transfer Block Exemption
Regulation 772/2004

-A Hypothetical Case Study

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Professor Hans Henrik Lidgard

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Summary

Innovation may be described as the new religion of the 21st Century. The acceleration of technical change and innovation has created a new competitive dynamism, which poses a challenge to the present competition policy. This competitive dynamism is particularly apparent in those markets that are referred to as constituting the “new economy”. These markets are characterised by high intensity of R&D, rapid innovation, intense competition based more on product development than on price and by the fact that the critical asset for competitive success often is intellectual property.

Licensing of technology contributes to economic development by disseminating innovations and by encouraging new entry. This leads to a more efficient exploitation of intellectual property. Thus, to facilitate the dissemination of knowledge and to maximise the benefit of innovation, the European Commission adopted, as part of an ongoing programme of modernisation of EU competition law, a new Technology Transfer Block Exemption Regulation in 2004. This block exemption adopts a more economical approach than the technology transfer block exemption it replaced. While the benefits of technology licensing are acknowledged in its preamble, the question to be asked here is to what extent these benefits are achieved.

The definition of the relevant market is a key concept in the application of European competition law. In European competition law a structure of analysis has evolved that begins with a relevant market definition, and then proceeds to the assessment of market power. After these two elements have been assessed focus is put on the anti-competitive behaviour and its consequences. This structural analysis can lead to errors in any case application but is particularly prone to error in dynamically competitive markets. Definition of the relevant market should merely be an intermediate step. A step that can only be a useful tool to aid the competitive assessment if it is conducted on a basis that is consistent with the aims of competition law.

The Technology Transfer Block Exemption Regulation has been welcomed by the industry. However, it has also received criticism. Firstly, to define a relevant market is a complex endeavour which is further complicated when dealing with dynamically complex markets. The complexity of this endeavour is not eased by the Guidelines that accompany the Technology Transfer Block Exemption Regulation. These play an increasingly important role in the application of competition law as a consequence of the decentralisation of enforcement through self-assessment. They are an important tool for antitrust counsellors, national courts and competition authorities. The Guidelines lack clarity in a number of areas. This in turn creates uncertainty for business, coupled with the risk of a fragmented

application at the national level. Secondly, the safe harbour that the block exemption offers is only available to parties that have a market share below the level set by the market share ceilings. In dynamic markets, these ceilings are easily and quickly reached. The result is that small innovative start-up companies, which lack large resources and are less familiar with competition law principles, are often put at a disadvantage. The disadvantage affects those companies that are arguably those that are vulnerable and in most need of the potential benefit of the Technology Transfer Block Exemption Regulation. Furthermore, the Technology Transfer Block Exemption Regulation introduces the concept of innovation markets. In light of the concept's debated usefulness, the European Commission has treaded lightly and carefully. The result of the European Commission's caution is an unclear application of the concept with the effect of further complicating the already complex Regulation.

Abbreviations

BER	Block Exemption Regulation
CFI	Court of First Instance
Commission	European Commission
Council	European Council
EC	European Community
ECJ	European Court of Justice
ECMR	Council Regulation 139/2004 on the control of concentration between undertakings. (EC Merger Regulation)
ECR	European Court Reports
EC Treaty	Consolidated version of the Treaty Establishing the European Community (Treaty of Rome), as amended in accordance with the Treaty of Nice Consolidated Version and the 2003 Accession Treaty
EU	European Union
F.N	Footnote
Horizontal Guidelines	Commission Notice Guidelines on the applicability of Article 81 of the EC Treaty to horizontal cooperation agreements.
IP	Intellectual Property
IPR	Intellectual Property Rights
NCA	National Competition Authority

Notice	Commission Notice, Guidelines on the definition of relevant market for the purposes of Community competition law
O.J	Official Journal of the European Communities
Para.	Paragraph
R&D	Research and Development
SCP	Structure-Conduct-Performance
SSNIP	Small but Significant Non-transitory Increase in Price
TTBE	Technology Transfer Block Exemption. Commission Regulation 240/96.
TTBER	Technology Transfer Block Exemption. Commission Regulation 772/2004
TTBER Guidelines	Commission Notice, Guidelines on the application of Article 81 of the EC Treaty to technology transfer agreements.

1 Introduction

The central position of innovation and dynamic efficiency in achieving continuous economic growth and welfare in society has been acknowledged by economists as well as public policy makers.¹ The Lisbon Strategy, adopted by the European Council in March 2000, provides a good example of the acknowledgement of innovation's effect on economic growth. The Lisbon Strategy is a ten-year-long development plan heavily based on the economic concept of innovation as the motor for economic change. The strategy intends to deal with the low productivity and stagnation of economic growth in the EU by transforming Europe into the world's largest knowledge based economy² and by that making EU "the most dynamic and competitive economy" in the world by 2010.

While recognising that research is a major contributor to innovation, innovation also takes other forms. Innovation can be incremental or radical, it can be technological, organisational or presentational, and it can result through the development of new business concepts or from technology transfer. Innovation can be defined as "*the successful production, assimilation and exploitation of novelty in the economic and social spheres*".³ In light of this definition, one may conclude that the undertaking is at the heart of the innovation process as it is through undertakings that the economic benefit of the successful exploitation of novelty is captured. Thus, any innovation policy must have its ultimate effect on undertakings: their behaviour, capabilities and operating environment.⁴

Undertakings are spurred to innovate by pressures and challenges, notably competition either in or for the market. As competition is one of the main drivers of innovation, one should recognise the importance of competition policy alongside innovation policy. From the perspective of both competition policy and innovation policy, it is important to distinguish the different forms competition can take. Innovative products are more likely to be the fruit of competition in markets that are, for instance, characterised by sophisticated consumer demand rather than in markets that are characterised by pure price-competition.⁵ Furthermore, undertakings that are effective innovators are often those that participate in networks with other undertakings or organisations. One should thus, recognise the beneficial

¹ Glader M., *Innovation Markets and Competition Analysis – EU competition law and US antitrust law*, Faculty of Law, Lund university, 2004.

² For further enquiry about the Lisbon Strategy, consult http://europa.eu.int/growthandjobs/key/index_en.htm and also http://en.wikipedia.org/wiki/Lisbon_strategy.

³ Communication From the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions, *Innovation Policy: Updating the Union's approach in the context of the Lisbon Strategy*. Brussels, 11.3.2003, COM(2003) 112, at p. 5.

⁴ Ibid.

⁵ Ibid., f.n 3, at p. 16.

effect of competition and cooperation on innovation.⁶ The conclusion should then be that the interaction between competition and innovation policy should aim at encouraging the flow of knowledge, recognising that some agreements between enterprises may be in the interest of promoting innovation and ultimately lead to greater competition.

In line with the Lisbon Strategy, the European Commission (hereinafter the Commission) has, during the past five years, by a modernisation process, reformed the EC competition rules.⁷ The aim of reform is to make competition rules less of the legalistic straightjacket they have been accused of being by introducing a more economically based approach. One aspect of the Commission modernisation programme's reform package is the new block exemption concerning technology transfer agreements. The purpose of Technology Transfer Block Exemption Regulation⁸ (hereinafter TTBER) is to facilitate the dissemination of technology by simplifying the regulatory framework and its application to licensing agreements.⁹ The underlying principle behind the TTBER is that the dissemination of technology stimulates innovation which in turn generates competition by which economic growth is stimulated.

Another aspect of the Commission's modernisation programme is the decentralisation of enforcement of competition rules and the abolition of the notification system.¹⁰ Undertakings are thus, left with a regime of self-assessment of competition law. As TTBER operates by creating a safe harbour below specified market-share thresholds, undertakings have to determine themselves whether their market shares are to be regarded as falling within the specified thresholds or not. If the parties to a technology transfer agreement come to the conclusion that their market shares fall within the market thresholds, the agreement will benefit from the safe harbour created by TTBER. However, if the parties to the agreement come to the conclusion that their market shares are above the market thresholds, the agreement does not benefit from the safe harbour and furthermore, the parties are forced to undertake an Article 81 EC-assessment without the possibility of notification. This may prove to be an unwelcome burden on undertakings with less familiarity of competition law principles.

The applicability of the safe harbour created by the TTBER depends on the market shares of the undertakings that are party to the technology transfer

⁶ See for instance Commission Regulation 2659/2000 of 29 November 2000 on the application of Article 81(3) of the Treaty to categories of research and development agreements. [2000] O.J L304/07.

⁷ For a detailed account of the Modernisation Programme see Commission's White Paper on Modernisation O.J [1999] C 132/1.

⁸ Commission Regulation No 772/2004 of 27 April 2004 on the application of Article 81(3) of the Treaty to categories of technology transfer agreements. [2004] O.J. L 123/11.

⁹ § 5-6 Preamble, TTBER

¹⁰ Council Regulation No 1/2003 on the implementation of the rules on competition laid down in Articles 81 and 82 of the Treaty. (Modernisation Regulation). [2003] O.J L 1/01. Came into force 24 January 2003 with effect from 1 May 2004.

agreement. Their market shares, in turn, depend on how the relevant market is defined. Generally speaking, if a given relevant market is defined narrowly, the market shares of the parties will be higher than if that given market is defined more broadly. The definition of the relevant market plays a key role in any EC Competition law assessment. However, as the applicability of TTBER is dependent on market shares, the role that relevant market definition plays with respect to TTBER is evidently crucial.

1.1 Purpose

The purpose of this thesis is to elucidate how the relevant market is defined under TTBER. Technology transfer through licensing agreements will frequently occur in markets that are technology intense. These markets encompass characteristics, which if compared to more traditional product markets that are less technology intense, are considerably more dynamic. Consequently, the already complex concept of definition of relevant market is further complicated when applied to markets with dynamic characteristics.

The question that will be asked is to what extent the TTBER succeeds in achieving its goal of facilitating the dissemination of technology. To be able to illustratively answer this question I have chosen to use a hypothetical technology based start-up company and attempt to define its relevant market under the TTBER.

1.2 Method & Material

A traditional legal dogmatic approach has been employed for this thesis. The European Commission regulations and notices have been analysed for the purpose of clarifying the legislative framework. For more general information on European competition law, Whish's *Competition law*¹¹ and Goyder's *EC Competition Law*¹² have been consulted

As the choice of subject has to a large extent been inspired by Marcus Glader, his doctoral dissertation *Innovation Markets and Competition Analysis*¹³ has been a constant source of information and inspiration. On the subject of the concept of market definition and its importance, Bishop & Walkers *Economics of EC Competition Law*¹⁴ and Faull & Nikpay's *The EC*

¹¹ Whish, R., *Competition Law*, LexisNexis, 5th Ed. 2003.

¹² Goyder, D.G., *EC Competition Law*, Oxford University Press, 4th Ed. 2004.

¹³ Glader, f.n 1.

¹⁴ Bishop S. & Walker M., *The Economics of EC Competition Law*, Sweet & Maxwell, 2nd Ed. 2002.

*Law of Competition*¹⁵ have been helpful, along with more economic texts such as Cooter & Ulen's *Law & Economics*¹⁶.

The TTBER has been in force for one year and a half and only a limited range of literature has been published on the subject at the time of writing. Most of the published literature is in the form of articles. The majority of the articles studied have been critical of the market share thresholds and the lack of clarity of the TTBER Guidelines.

Finally, whenever the Internet has been used as a source of information, it has been done with due care and attention as to the academic rigour of the material accessed thereby.

1.3 Delimitis

The intersection between innovation and competition law is interesting and raises a number of issues, most of which must remain outside the scope of this thesis, despite their relevance to the topic at hand. This thesis will focus on the definition of relevant market under the TTBER. Market definitions which are induced by other block exemptions or, for the purpose of determining dominance under Article 82 EC or, induced by a proposed merger under the Merger Regulation, have been left outside the scope of this thesis. The discussion of different types of licence agreements, different types of clauses and their competitive effect, is beyond the scope of this thesis although it touches on the subject. The focus of this thesis is on the hypothetical company operating in a technology intense sector with all the dynamics such a market encompasses. Lastly, the geographical scope of the thesis is limited to Europe.

1.4 Outline

The second chapter will acquaint the reader with the general principles of EC competition law as well as the relationship between competition law, intellectual property and innovation.

The third chapter will present the TTBER in a very general manner. In this chapter the outline, scope and application of the TTBER will be portrayed.

The fourth chapter will introduce the principles of market definition for the purposes of EC law. The objective of this chapter is to portray the general mechanism of market definition.

¹⁵ Faull J. & Nikpay A., *The EC Law of Competition*, Oxford University Press, 1st Ed. 1999.

¹⁶ Cooter R. & Ulen T., *Law & Economics*, Addison-Wesley, 3rd Ed. 2000.

The fifth chapter elucidates how markets are defined for the purposes of TTBER.

The sixth chapter will attempt an in-depth analysis of how market definition is to be made in reference to high technology markets, focusing on the hypothetical firm.

The seventh chapter contains a Law & Economics discussion. The discussion focuses on the intersection between innovation and competition law.

The eight chapter presents the conclusions of the thesis.

2 EC Competition Law & Relationship between Intellectual Property and Innovation

2.1 EC Competition Law

In general terms, competition may be understood as the relationship between a number of undertakings which sell goods or services of the same kind at the same time to an identifiable group of customers.¹⁷ The main concern of competition policy is the process of competition and not the preservation of competitors.¹⁸ This process is believed to enhance effective allocation of resources and achieve advances in productive efficiency. Furthermore, the constant process of vigorous adjustment to continual changes in consumer preferences creates an incentive for producers to invest in research and development (hereinafter R&D), and to innovate.

However, in almost any market the competitive process will warrant winners. These winners will gain market power, which in turn enables them to exercise strategic power and increase their profit margins. The increase in profitability may then allow them, by taking advantage of economies of scale or pursuing successful R&D, to gain further competitive advantage over their competitors. The demise of some competitors enables them to further strengthen their competitive position. The central objective of efforts aimed at preserving the process of competition should be to disrupt this vicious circle before the point where a winner's dominance leads to directly anti-competitive behaviour.

Having said this, it is crucial to highlight that the preservation of the competitive process is only one aspect of EC competition law. Competition policy is an expression of the current values and aims of the society in which the competition law systems operates.¹⁹ Thus, competition policy is infused with tension as it is susceptible to change in much the same way as political thinking and values change over a period of time. Accordingly, consumer welfare and single market integration are other aspects that need to be considered when discussing EC competition law. Such interesting concerns, however, regrettably go beyond the scope of the subject of this thesis.

¹⁷ Goyder, f.n 12, at p. 8.

¹⁸ Ibid., at p. 9.

¹⁹ Whish, f.n 11, at p. 17.

Competition policy is one of the principal activities of the European Community.²⁰ The legislative provisions of EC competition law are found in the EC Treaty and Council Regulations. These legislative provisions may be divided into three headings: control of the content of agreements between undertakings²¹, (both horizontal and vertical), control of abuse of dominance²² (the abuse of market power) and control of concentrations²³ (mergers). As the main concern of this thesis is agreements between undertakings, only Article 81 EC will be discussed here.

Article 81 EC provides that agreements between undertakings,²⁴ which have an effect on trade between Member States and have as their object or effect the prevention²⁵ of competition within the common market, are prohibited and automatically rendered void.²⁶ This sanction of voidness²⁷, with the consequence that agreements are unenforceable in civil litigation²⁸, is considered to be significant in the legal system of the Community and has been held by the ECJ to have the status of public policy.²⁹ However, the ECJ has held that, provided that it is possible to sever the offending provisions of the agreement from the rest of its terms, the latter remains valid and enforceable.³⁰ This is not a Community-wide principle: the mechanism of severability is a matter to be decided according to the national law of each Member State.

²⁰ Article 3, Consolidated version of the Treaty Establishing the European Community (Treaty of Rome), as amended in accordance with the Treaty of Nice Consolidated Version (O.J 2002 C/325/1-184) and the 2003 Accession Treaty (O.J 2003 L236/17). Hereinafter EC Treaty.

²¹ Article 81 EC Treaty.

²² Article 82 EC Treaty.

²³ Council Regulation No 139/2004 on the control of concentrations between undertakings (EC Merger Regulation). [2004] O.J L24/1. (Hereinafter ECMR).

²⁴ For the purpose of this section, the use of “undertaking” is wide including “*decisions by associations of undertakings and concerted practices*” (Article 81(1) EC). For further elaboration on the precise definition and boundary of this, see Whish, f.n 7, at pp. 80-106.

²⁵ For the purpose of this section “prevention” includes “*restriction*” and/or “*distortion*” (Article 81(1) EC). For further elaboration on the precise definition and application, see Whish, f.n 11, at pp.106-128.

²⁶ Article 81(1) and (2) EC.

²⁷ The question whether the contract is merely void or void and illegal is an interesting question which goes beyond the subject of the thesis. In UK the Court of Appeal has held that a contract that infringes Article 81(1) EC is illegal with the result that the parties to the agreement cannot bring an action for damages for any harms suffered due to that they have been parties to such illegal activity. (*Gibbs Mew plc v Gemmell* [1998] Eu LR 588, CA.). However, the ECJ has held that there may be circumstances in which a party to an agreement might be able to sue another for damages, as it would otherwise put the full effectiveness of Article 81 EC at risk. (*Case C-453/99 Courage Ltd v Crehan* [2001] ECR I-6297, see para 26.).

²⁸ This has also been referred to as the “Euro-defence” as may enable parties to avoid contractual obligations.

²⁹ C-126/97 *Eco Swiss China Time Ltd v Benetton* [1999] ECR I-3055.

³⁰ C-56/65 *Société Technique Minière v Maschinenbau Ulm* [1966] ECR 253, C-319/82 *Société de Vente de Ciments et Bétons de l’Est v Kerpen und Kerpen GmbH* [1983] ECR 4173.

The provisions of Article 81 EC provide for an exception to its own applicability.³¹ If agreements that are caught by Article 81(1) EC satisfy, the four cumulative conditions set out in Article 81(3) EC, Article 81(1) EC may be declared inapplicable. Firstly, the agreement must improve the production or distribution of goods or promote technical or economic progress. Secondly, consumers must receive a fair share of the resulting benefit. Thirdly, the agreement may not contain dispensable restrictions. Lastly, the agreement must not substantially eliminate competition in the relevant market. Before the modernisation programme, agreements that could be exempted had to be notified to the Commission³² and the Commission had the exclusive right to grant exemptions under Article 81(3) EC. However, with the coming in to force of Regulation 1/2003³³, the system of notification and the granting of individual exemptions have been abolished. Article 81(3) EC is now directly applicable³⁴, and the Commission shares the competence to apply it with national competition authorities and national courts. An alternative way to get an agreement exempted under Article 81(3) EC is to draft it in accordance with a Block Exemption issued by the Commission. The system of Block Exemptions is left unaffected by Regulation 1/2003 but not by the modernisation programme as such. A number of the old Block Exemptions have been replaced by new ones in which a more economically based approach has been adopted.

2.2 Relationship Between Competition Law, Intellectual Property & Innovation

Intellectual property law (hereinafter IP law) is compensatory in nature in that it grants an innovator a temporary right to exclude others from using the invention. The right to exclude others prevents free riding and enables the inventor to recoup investments incurred. The aim of IP law is to work as a stimulus for innovation. However, while IP law seeks to reward for creative efforts, the legal monopoly granted may at times become a monopoly as defined under competition law.³⁵ An inherent contradiction becomes apparent between these two systems. The purpose of competition law is to create more competition in the market, which at times is hindered by an exclusive right granted under IP law. Thus, application of competition law would in essence mean taking away that which is granted by IP law. Nonetheless, this contradiction is only superficial. Both competition law and

³¹ Article 81(3) EC.

³² Regulation 17/62, Regulation No 17. First Regulation implementing Article 85 and 86 (now Article 81 and 82) of the Treaty. O.J Sp. Ed. 1962, No. 204/62, p. 87. (as subsequently amended).

³³ Regulation 1/2003, f.n 10.

³⁴ Article 1(1) and 1(2) Regulation 1/2003, f.n 10.

³⁵ Peeperkorn, L., *IP Licenses and Competition Rules: Striking the Right Balance*, World Competition 26(4): 527-539, 2003. Kluwer Law International 2003. At p. 528.

IP law serve to benefit consumer welfare. Competition law ensures efficient allocation of economic resources,³⁶ it operates in favour of a more equal distribution of wealth within society and in favour of better products. IP law, on the other hand, encourages investment in R&D, which results in innovation. While the conflict between static efficiency (low prices) and dynamic efficiency (innovation) exists in the short run,³⁷ on a higher level of analysis, IP law and competition law are complementary and mutually reinforcing.³⁸ Whilst this complementary relationship is recognised as necessary in the guidelines accompanying TTBER³⁹ (hereinafter TTBER Guidelines), the crucial issue is to determine an optimum trade-off between low prices and innovation.⁴⁰ As IP law is but a way of protecting technological advance and protect profits,⁴¹ competition law should be used to fray market power granted by IP rights without fearing that this might result in a decline of R&D investment and innovation. It has been submitted that, despite of the complementary relationship, restrictions of competition should only be accepted to the extent necessary to safeguard innovation.

³⁶ Allocation of resources, or otherwise called allocative efficiency, denotes the optimum allocation of scarce resources between end users, in order to produce the combination of goods and services which best accords with the pattern of consumer demand. Consumer welfare is optimised when for each product the price is equal to the lowest real resource cost of supplying that product, including a normal profit reward to suppliers.

³⁷ Ritter, C., *The New Technology Transfer Block Exemption under EC Competition Law*, Legal Issues of Economic Integration 31(3): 161-184, 2004. Kluwer Law International 2004. At p. 164.

³⁸ Dolmans M. & Piilola A., *The Proposed New Technology Transfer Block Exemption – Is Europe really better off than with the current regulation?*, World Competition 2003, Vol. 26, Issue 4: 541-565, 2003. Kluwer Law International 2003. At p. 542.

³⁹ Commission Notice, Guidelines on the application of Article 81 of the EC Treaty to technology transfer agreements. [2004] O.J L 101/2. At § 7.

⁴⁰ Ritter, f.n 37, at p. 164.

⁴¹ Peeperkorn, f.n 35, at pp. 529-530.

3 The Technology Transfer Block Exemption Regulation 772/2004

3.1 Historical Background and the Evolution of the Block Exemption

Article 81 EC applies to agreements, which cause “prevention, restriction or distortion of competition”. This naturally raises the question of when competition may be said to be prevented, restricted or distorted. Traditionally, the Commission has interpreted Article 81(1) EC broadly; nearly all agreements were considered to fall within the scope of the Article, regardless of the market position of the parties and of the economic bearing of the agreement.⁴² The consequence of such an extensive interpretation was a vast amount of notifications to the Commission. As the Commission was only able to adopt a handful of formal decisions under the procedures laid down in Regulation 17/62⁴³, this resulted in a considerable administrative burden, which caused severe delays. The administrative backlog was to some extent eased with the introduction of “comfort letters” which, although not constituting formal decisions⁴⁴, provided applicants with the Commission’s view of the probability of the notified agreement’s compatibility with Article 81(3) EC. However, comfort letters, being rather unsatisfactory due to their informal nature, merely relieved the problem without solving it and further policy solutions were needed.

Being thus faced with a huge backlog, the Commission adopted the approach of developing “block exemptions” under powers conferred to it by the Council⁴⁵ through Regulation 19/65⁴⁶, as amended by Regulation 1215/99⁴⁷. The purpose of the block exemptions was, and still is, to define certain categories of agreements which satisfy the conditions of Article 81(3) EC. Council Regulation 19/65⁴⁸ demanded that the adopted Block Exemption Regulations contained a list of conditions that must be fulfilled,

⁴² Bishop & Walker, f.n 14, at para. 5.02.

⁴³ Article 9(1) Regulation 17/62, f.n 32, gave the Commission exclusive power to grant individual exemptions.

⁴⁴ As comfort letters were not formal decision they thus, did not bind national courts. C-253/78 Procureur de la République v Giry and Guerlain [1980] ECR 2327.

⁴⁵ The Council has power to confer such vires by virtue of Article 83(2)(b) EC.

⁴⁶ Council Regulation (EC) 19/65 EEC on the application of Article 85(3) (now 81(3) of the Treaty to certain categories of agreements and concerted practices (Delegating powers to exempt exclusive dealing and license agreements), O.J [1965-66] p. 35.

⁴⁷ Council Regulation 1215/99 amending Regulation No 19/65 on the application of Article 81(3) of the Treaty to certain categories of agreements and concerted practices. O.J [1999] L148.

⁴⁸ Article 1(2)(a) and (b) Council Regulation 19/65, f.n 46.

categories of agreements covered, exempted restrictive clauses (white list) and clauses which could not be included (black list) in the agreements. Although the use of block exemptions has proved to be efficient and helped to reduce the administrative backlog, they have been subject to criticism. The early Block Exemption Regulations' formalistic⁴⁹ and rather inflexible nature led to too much emphasis being placed on individual clauses irrespective of their economical consequence. The possibility of falling within a block exemption, and thereby gaining automatic clearance under Article 81(3) EC, depended on an agreement's structure rather than its impact on competition.

3.2 Technology Transfer Block Exemption, Regulation 240/96⁵⁰

Before the 1996 Technology Transfer Block Exemption (hereinafter TTBE), intellectual property licence agreements were covered by two block exemptions, one for patents⁵¹ and one for know-how⁵². This was not an optimal situation for potential licensor wanting to make use of mixed licences. The two block exemptions provided models for licences that were relatively straightforward but only to the extent that licence agreement did not involve both types of intellectual property. If a licence agreement covered both types of IP rights and neither could be regarded to be ancillary to the other, an individual exemption was required. A desire to terminate awkward points covering both groups of licences led the Commission to consider how to combine the two block exemptions into a single instrument.

After some delays, the TTBE came into force in 1996. The Regulation aimed to aid economic development of the Community encouraging the dissemination of technical knowledge and the promoting the manufacture of technically more sophisticated products.⁵³

The TTBE applied to pure or mixed patent and know-how licensing arrangements, leaving other IP rights,⁵⁴ which could not be regarded as ancillary to licensing arrangements, outside its scope. Furthermore, the

⁴⁹ Whish, f.n 11, at p. 171.

⁵⁰ Commission Regulation 240/96 of 31 January 1996 on the application of Article 85(3) (now 81(3)) of the Treaty to certain categories of technology transfer agreements. O.J 1996 L31/2.

⁵¹ Commission Regulation No 2349/84 of 23 July 1984 on the application of Article 85(3) (now 81(3)) of the Treaty to certain categories of patent licensing agreements. O.J [1984] L219/15. No longer in force.

⁵² Commission Regulation No 556/89 of 30 November 1988 on the application of Article 85(3) (now 81(3)) of the Treaty to certain categories of know-how licensing agreements. O.J [1989] L61/1. No longer in force.

⁵³ § 3 Preamble, TTBE.

⁵⁴ Such as trademarks and copyrights.

TTBE was applicable neither to multi-party licensing nor to pooling arrangements.⁵⁵

The basic scheme of the TTBE was organised around the distinction between three categories of clauses. The first category, referred to as “white clauses”, consisted of clauses that were considered unlikely to restrict competition.⁵⁶ The second category, referred to as “black clauses”, consisted of clauses that were presumed to be anti-competitive.⁵⁷ The third category, referred to as “grey clauses”, consisted of clauses that required individual consideration to determine their competitive effect. A notified “grey clause” was exempted if it was not opposed within four months of notification.⁵⁸

Under the TTBE, the Commission had the discretionary power to withdraw the benefit of the block exemption on a case-by-case basis. The TTBE applied regardless of market share. Nevertheless, the TTBE contained a reference to a 40% market share⁵⁹, which was not held to be a condition that would limit the applicability of the block exemption, but rather a circumstance in which the Commission would consider withdrawing the benefit of the block exemption.

The TTBE was criticised for its form-based and legalistic approach, which some saw as overly detached from commercial sense and anti-competitive reality.⁶⁰ The structure of the TTBE was complicated and centred round intra-brand competition⁶¹ and market integration. It had a formalistic framework focusing on licensing agreements’ phrasing rather than the economic environment in which they operated. Furthermore, this formalistic framework became increasingly incompatible with the modernisation reforms of EC competition rules in which a more economical and effect-based approach was adapted, focusing on inter-brand competition issues and on the analysis of potential efficiencies of certain restrictions.

⁵⁵ Article 1(1) and §4 Preamble, TTBE.

⁵⁶ Article 2 TTBE.

⁵⁷ Article 3 TTBE.

⁵⁸ Article 4 TTBE.

⁵⁹ Article 7(1) TTBE. With the coming into force of Regulation 1/2003 this opposition procedure had to be repealed due to the abolition of the notification system.

⁶⁰ Fine, F., *The EU’s New Antitrust Rules for Technology Licensing: a turbulent harbour for licensors*, European Law Review, 2005 Vol. 29, Issue 6, pp. 766-787, at p. 768.

⁶¹ Intra-brand competition occurs when undertakings compete using the same technology as opposed to inter-brand competition which occurs when undertakings compete using different technologies.

3.3 The Technology Transfer Block Exemption, Regulation 772/04⁶²

The TTBER and the TTBER Guidelines were published on the 27th of April 2004 and came into force on the 1st of May the same year.⁶³ The adaptation of the TTBER was the result of a long and comprehensive review during which the Commission reassessed its policies towards technology licensing.⁶⁴

The result was a widely welcomed regulatory change, promoting dynamic competition through innovation by being more flexible and economically oriented towards technology transfer agreements.⁶⁵ Furthermore, the TTBER is now more in line with the Commission's new approach, as demonstrated in the new generation of block exemptions⁶⁶ and horizontal cooperation agreements⁶⁷. This new approach consists of greater emphasis being placed on an analysis of the market power possessed by the parties and their ability to produce anti-competitive effects through the contemplated commercial arrangement. Accordingly, if compared to the TTBE, which arguably was the last piece of legislation under the Commission's formalistic regime, the TTBER offers major changes both in respect to scheme, scope and application.

3.3.1 Scope of TTBER

The TTBER applies to licence agreements between two parties for the production of products produced with the licensed technology.⁶⁸ The scope of the TTBER is more generous than the previous block exemption on technology transfer.⁶⁹ As was the case with the former block exemption, the current block exemption applies to know-how licences although the

⁶² The TTBER, f.n 8.

⁶³ The 1 May 2004 was also the day of the accession of ten new Member States as well as the coming into force of Regulation 1/2003 (Modernisation Regulation).

⁶⁴ The review started with the adoption of a mid-term review of the TTBE in December 2001. This was followed by a consultation process, which ended with an Evaluation Report. The result was the publication of a Draft TTBER and Draft Guidelines on October 2001 which was also followed by a consultation process which resulted in some amendments before the adaptation of the TTBER.

⁶⁵ Dolmans M. & Piilola A., *The New Technology Transfer Block Exemption – A welcome reform, after all*, World Competition 2004, Vol. 27, Issue 3: 351-363, at p. 351.

⁶⁶ Commission Regulation 2790/99 of 22 December 1999 on the application of Article 81(3) of the Treaty to categories of vertical agreements and concerted practices. [1999] O.J L335/21; Commission Regulation 2659/2000 of 29 November 2000 on the application of Article 81(3) of the Treaty to categories of research and development agreements. [2000] O.J L304/07; Commission Regulation 2658/2000 of 29 November 2000 on the application of Article 81(3) of the Treaty to categories of specialisation agreements. [2000] O.J L304/03.

⁶⁷ Commission Notice Guidelines on the applicability of Article 81 of the EC Treaty to horizontal cooperation agreements. [2001] O.J C3/02.

⁶⁸ Article 1(1)(f) and Article 2 TTBER.

⁶⁹ The TTBE applied to two-party licensing agreements provided that such licence agreement contained at least one of eight listed obligations, Article 1(1) TTBE.

definition of know-how has been slightly altered to mean “*package of non-patented practical information, resulting from experience and testing, which is secret, substantial and identified*”.⁷⁰ Furthermore, the TTBER extends the scope of application to include licences of software copyrights and designs.⁷¹ In line with the TTBE other, more traditional, IP rights have been left outside the scope of the TTBER unless they are ancillary to the primary object of the agreement. This may be explained by Council Regulation 19/65⁷², which enables the Commission to exempt licences to exploit industrial property as opposed to commercial property. The former, arguably, does not include IP rights such as artistic copyrights and trademarks.⁷³

Similarly to the TTBE, the TTBER does not apply to multi-party licensing agreements.⁷⁴ Thus, the TTBER does not apply to patent pools. However, it does apply to a licensing agreement between a party and a patent pool as it is considered to constitute a two party agreement for the purpose of the TTBER.⁷⁵ If there are more parties to a licence agreement and the agreement is of similar nature to a two-party technology transfer agreement, the Commission will apply the principles set out in TTBER by analogy.⁷⁶

Lastly, the TTBER applies to an agreement for the transfer of technology for as long as the IP right in the licensed technology has not expired, lapsed or been declared invalid.⁷⁷

3.3.2 Hardcore Restraints & Excluded Restrictions

The TTBER replaces the “straitjacket” approach of extensively listing black, white and grey clauses with a more flexible framework, which gives the parties greater freedom to structure their agreements in ways that make the most commercial sense. The extensive listing approach has been abandoned and replaced with a limited list of black listed clauses (hardcore restraints)

⁷⁰ Article 1(1)(i) TTBER. The TTBE defined know-how as “*a body of technical information that is secret, substantial and identified in any appropriate form*” (Article 10(1)).

⁷¹ Article 1(1)(b), (h) TTBER, as opposed to *secret, substantial and identified in any appropriate way*, § 5 Preamble, TTBE.

⁷² Article 1(1)(b) Regulation 19/65, f.n 46.

⁷³ Korah, V., *Draft Block Exemption for Technology Transfer*, [2004] European Competition Law Review, Vol. 25, Issue 5:247-262, at p. 249.

⁷⁴ Article 1, Council Regulation 19/65, limited the Commission’s power to draft block exemption regulations applicable only to two-party agreements. However, the limitation has been modified by amendments made in Regulation 1215/99 (f.n 43), Article 1(1)(a). The Commission now has the power to draft block exemption regulations applicable to *two or more undertakings*. In light of this, one can question why the TTBER does not apply to multiparty licensing agreements.

⁷⁵ § 212 TTBER Guidelines.

⁷⁶ § 40 TTBER Guidelines .

⁷⁷ Article 2 TTBER.

and grey listed clauses (excluded restraints), all other clauses being exempted.

3.3.2.1 Hardcore Restraints⁷⁸

If an agreement contains a clause that is categorised as a hardcore restriction the entire agreement will automatically fall outside the scope of the TTBER.⁷⁹ The presence of such a restriction raises the presumption of illegality, which is not likely to be exempted under Article 81(3) EC.⁸⁰ One should take into account that the presence of a hardcore restriction may give rise to substantial fines.⁸¹

3.3.2.2 Excluded Restrictions⁸²

The clauses contained in the list of excluded restrictions are neither black listed nor block exempted. There is no presumption for or against illegality and they require individual assessment of their pro- and anti-competitive effect on an ad hoc basis. If an excluded restriction is found to violate Article 81(1) EC and if it does not fulfil the cumulative conditions contained in Article 81(3) EC, it does not prevent the application of the TTBER to the rest of the agreement. Only the clause in question is unenforceable. Thus, the rule of severability applies to restrictions set out in Article 5 TTBER but not to restrictions set out in Article 4 TTBER.⁸³ Furthermore, it does not appear that the Commission will in practice impose fines due to the presence of excluded clauses.⁸⁴

3.3.3 Competitors & Non-Competitors

In line with the Commission's more economic-based approach, the TTBER distinguishes between licence agreements between non-competitors (vertical agreements) and those between competitors (horizontal agreements). Generally, the former raise fewer competition concerns than the latter and

⁷⁸ Article 4 TTBER.

⁷⁹ § 130 TTBER Guidelines.

⁸⁰ However, the Court of First Instance (hereinafter CFI) has indicated that there in principle does not exist any anti-competitive practice which, whatever the extent of its effects on a given market, cannot be exempted, provided that all conditions laid down in Article 81(3) EC are satisfied. Thus, per se illegality does not exist under EC competition rules. T-17/93 *Matra Hachette S.A v. Commission of the European Communities*. Judgement of the Court of First Instance (Second Chamber) of 15 July 1994. ECR 1994 p. II-00595.

⁸¹ Fine, f.n 60, at p. 785.

⁸² Article 5 TTBER.

⁸³ However, as noted above (p. 7) the effect of severability for the purpose of EC competition rules should not be confused with severability under national contract rules. If a restricted clause is found to be anti-competitive and severable under EC competition rules, the agreement may still be considered unenforceable if severability is not possible under national contract rules.

⁸⁴ Fine, f.n 60, at p. 785.

are therefore subject to rules that are more lenient.⁸⁵ The distinction between non-competitors and competitors is crucial as it affects the substantive assessment of the agreement; it determines which set of black listed clauses and which market-share threshold should apply. The first step, under the analytical scheme set up by the TTBER, should be to determine the competitive relationship between the parties in the *absence of the agreement*.⁸⁶ Acknowledging the difficulty of determining such a relationship in the IP licensing context, the Commission suggests a narrow and perhaps more realistic definition of competitors than that contained in the TTBE.

3.3.3.1 Competitors

Where the licensor and the licensee are both active on the same product market, the definition encompassing both product market definition and geographic market definition, *and/or* the same technology market, they are considered as competitors for the purpose of the TTBER. They are considered as being potential competitors in the relevant product market if, in the absence of the agreement, they would likely make the necessary additional investment to enter the relevant market in response to a small but permanent increase in product prices. For the application of TTBER, potential competition is only considered for the relevant product market and not taken into account on the relevant technology market.⁸⁷ However, once an agreement falls outside the scope of the TTBER, potential competition in the relevant technology market may be considered for the purposes of an analysis under Article 81 EC. The Commission acknowledges that an assessment of the competitive relationship between the parties is sensitive to material changes in the facts, leaving the door open to re-classification from a relationship of competitors to non-competitors.⁸⁸

3.3.3.2 Non-Competitors

If the parties are neither actual nor potential competitors in any relevant market they are naturally deemed to be non-competitors. This includes

⁸⁵ Article 4(1) TTBER contains the list of hardcore restrictions for competitors. Roughly speaking these fall into five categories; i) price restrictions, ii) limitations on output, iii) allocation of markets/customers, iv) restrictions on the licensee to exploit its own technology, and v) restrictions on either party to carry out R&D. Noteworthy is that in relation to agreements between competitors, reciprocal agreements are subject to a longer list of hardcore restrictions than non-reciprocal agreements. For definition of reciprocal/non-reciprocal agreements, see Article 1(1)(c), (d) and § 78 TTBER Guidelines. Article 4(2) TTBER contains the list of hardcore restrictions for non-competitors. These restriction fall into three categories; i) price fixing and resale price maintenance, ii) restrictions on a licensee that is a member of a selective distribution system at retail level from making active/passive sales to end users, and iii) the ability of the licensee to make passive sales despite territorial or customer restrictions. This last category is however, subject to a number of exceptions.

⁸⁶ Article 1(1)(j)(ii) TTBER, § 27 TTBER Guidelines.

⁸⁷ § 30 TTBER Guidelines.

⁸⁸ § 33 TTBER Guidelines. However, this paragraph only deals with the situation where the licensor's technology becomes obsolete during the life-time of the license agreement.

situations whereby one party is active on a product market and the other party is active on the corresponding technology market. Furthermore, if one of the parties owns a competing technology but does not license it out, the parties will be considered as non-competitors for the purpose of the TTBER.

If the parties hold one-way or two-way blocking patents, this occurring when a technology cannot be exploited without infringing upon another technology, they are considered to be non-competitors.⁸⁹ However, it is up to the parties to provide evidence of the existence of a blocking position. A final court judgement or an opinion of an independent expert will qualify as convincing evidence.⁹⁰

If both parties own patents in the same field they may nevertheless be considered to be non-competitors if one technology represents “*such a drastic innovation*”⁹¹ that the other technology becomes obsolete or uncompetitive. As this may not always be clear at the time of the conclusion, the possibility of re-classification from competitor to non-competitor exists.⁹² However, there is some uncertainty as to the standard of proof the parties need to meet to be able to undergo this re-classification.

Lastly, where the parties to a licence agreement are not competitors at the time of the conclusion of the agreement but become competitors at a later stage, they will be considered non-competitors for the full life of the agreement unless the agreement is subsequently amended in any material way.⁹³

3.3.4 Market-Share Thresholds

One of the most important changes the TTBER has brought forth, apart from the assessment of the competitive relationship of the contracting parties, is the use of market-share thresholds. The TTBER offers a general block exemption, a “safe harbour”, for technology transfer agreements below certain market-share thresholds. The introduction of market-share thresholds within a block exemption provides guidance up to a level where it is believed that contracting arrangements cannot harm competition at all, allowing competition authorities to focus on significant cases above the thresholds.⁹⁴ Having said this, one needs to remember that the safe harbour only applies to technology transfer agreements that do not contain any hardcore restrictions. Nor does the safe harbour apply to excluded

⁸⁹ § 32 TTBER Guidelines.

⁹⁰ Ibid.

⁹¹ § 33 TTBER Guidelines.

⁹² Ibid.

⁹³ Article 4(3) TTBER and § 31 TTBER Guidelines.

⁹⁴ European Economic & Marketing Consultants' Comments on Draft Commission Regulation and Guidelines on the Application of Article 81(3) of the Treaty to categories of technology transfer agreements, Brussels, November 26, 2003.

http://www.europa.eu.int/comm/competition/antitrust/technology_transfer_2/37_eemc_en.pdf. Last visited 2006/01/20.

restrictions; these clauses must be assessed separately on an ad hoc basis under Article 81 EC.⁹⁵

The Commission had originally attempted to introduce market-share thresholds in TTBE, being of the opinion that the proposed TTBE should benefit neither licensors nor licensees with substantial market share in a particular relevant market. However, there was an almost universal opposition from industry to the Commission's market-share proposal. Therefore, the references to the market-share thresholds were initially watered down, and in the end abandoned by the Commission.⁹⁶ Criticism of the use of market-share thresholds has resurfaced in respect of the TTBER. It has been described as a "blunt regulatory tool", particularly when used in the IP context.⁹⁷ Opposition centred on the question of whether market-share thresholds are needed at all, taking into account the practical difficulties associated with the gathering of reliable data, meeting the burden of proof and the resulting legal uncertainty. This becomes specifically questionable considering that Article 82 EC prevails over any block exemption Regulation.⁹⁸ Notwithstanding the criticism, the Commission retained the market-share thresholds in the final TTBER on the ground that it would be unwarranted to introduce an unlimited block exemption without a safety measure that restrictions in a technology transfer agreement between parties with strong market position would not be subject to any review.

In a technology transfer agreement composed between competitors, the TTBER applies where the *parties have a combined market share* that does not exceed 20% on the affected relevant technology *and* product market.⁹⁹ If the parties are considered non-competitors, the exemption applies on the condition that the *market share of each of the parties* does not exceed 30% on the affected relevant technology *and* product market.¹⁰⁰

There are then two classes of relevant markets to take into consideration at the time of assessing market shares; the relevant technology market and the relevant product market.

The market share of a party on the relevant technology market is defined in terms of the presence of the licensed technology on the relevant product market.¹⁰¹ For the purpose of calculating the market share on the relevant technology market, account should be taken to the combined market share

⁹⁵ § 107 TTBER Guidelines.

⁹⁶ Goyder, f.n 12, at pp 233-234.

⁹⁷ Hull, D.W. & Toro, A.L., *Reform of the Technology Licensing Rules*, The European Antitrust Review 2004, pp. 34-38. At p. 35. <http://c-b.biz/publications/oid32193/404.pdf>. Last visited 2006/01/15.

⁹⁸ T-51/89 Tetra Pak Rausing SA v European Commission [1990] ECR II-309.

⁹⁹ Article 3(1) TTBER. This means that if the licensed technology has applications in several product or geographical markets, where the parties are considered competitors, the safe harbour is only afforded to those markets where the threshold is not exceeded.

¹⁰⁰ Article 3(2) TTBER.

¹⁰¹ Article 3(3) TTBER.

on the product market of the products incorporating the technology, which are sold by the licensor and all its licensees. If the parties are competitors then the products integrating the licensee's own technology shall be included when calculating the market share on the relevant technology market. The market share on the relevant product market is calculated on the basis of each party's sales of all its substitutable products on the relevant market, regardless of the technology used.¹⁰²

The market share is calculated on the basis of information relating to the preceding year.¹⁰³ In case of new technologies, when such information is not available, a zero market share is assigned.¹⁰⁴ Once sales commence, the technology will start accumulating shares. If the market-share thresholds are exceeded on any relevant market, the licensing agreement does not benefit from the block exemption for that relevant market. However, if the market-share is initially within the thresholds and later exceeds it, the TTBER offers a two-year grace period.¹⁰⁵ Furthermore, there is no presumption of illegality once an agreement falls outside the scope of the safe harbour. There is specifically no presumption that an agreement that falls outside the block exemption is caught by Article 81(1) EC or that it fails to satisfy the conditions of Article 81(3) EC.¹⁰⁶

Notable is that, if a licence agreement falls outside the scope of the TTBER, due to popped market-share ceilings on the relevant technology market, the Guidelines offer an alternative safe harbour. This "second" safe harbour operates outside the realm of the hardcore restraints. The Commission takes the view that Article 81 EC is unlikely to be infringed if there are four or more independently controlled substitutable technologies to the technologies that are controlled by the parties to the agreement.¹⁰⁷ This built-in safe harbour creates a presumption of non-infringement, a rule of thumb if one will, that parties, which have popped the market-share ceilings of the TTBER, can rely on.¹⁰⁸

It is acknowledged in the TTBER Guidelines that some agreements may also affect innovation markets.¹⁰⁹ The innovation market concept requires, for the purpose of a competition law assessment, a delineation of a separate up-stream market for innovation efforts.¹¹⁰ If innovation efforts are typically R&D programmes then the relevant innovation market should consist of competing R&D programmes.¹¹¹ However the innovation market concept carries with it a number of uncertainties and difficulties such as uncertainties in relation to the effects of market concentration on innovation

¹⁰² § 23 TTBER Guidelines.

¹⁰³ Article 8(1) TTBER.

¹⁰⁴ § 70 TTBER Guidelines.

¹⁰⁵ Article 8(2) TTBER.

¹⁰⁶ § 37 TTBER Guidelines.

¹⁰⁷ § 131 TTBER Guidelines.

¹⁰⁸ Glader, f.n 1, at p. 324.

¹⁰⁹ § 25 TTBER Guidelines.

¹¹⁰ Glader, f.n 1, at p. 6.

¹¹¹ Ibid.

efforts and the difficulty in accurately identifying competing R&D programmes at an early stage of development. In light of this, the Commission states that it will ordinarily confine itself to the examination of impact of agreements on competition within *existing* product and technology markets, treating innovation as a source of potential competition. Nevertheless, the Commission states that in instances where a licence agreement affect innovation aiming at creating new products and where it is possible at an early stage to identify R&D programmes it may be necessary to define innovation markets.¹¹² In such circumstances, it can be analysed whether after the agreement there will be a sufficient number of competing R&D programmes left for *effective innovation to be maintained*.¹¹³ There are a number of problems with this approach, most which will be elaborated upon further in the coming chapter. However, one could point out here the fact that the Commission does not indicate how many competing R&D programmes will be held to constitute effective competition in innovation. This does not help making the TTBER and the accompanying Guidelines any less complex in its practical application.

3.3.5 Interaction with other Block Exemption Regulations, Withdrawal & Duration

The relationship between the TTBER and other block exemption Regulations is based on the “primary object” test.¹¹⁴ When the primary object of the licensing agreement is to transfer technology in order to produce contract products then the agreement is subject to TTBER. If however, the primary object of the licensing agreement is to conduct R&D then the agreement will be subject to the R&D Block Exemption¹¹⁵.

The Commission and National Competition Authorities (hereinafter NCA), the latter to the extent that the relevant market does not exceed their national territory, may withdraw the benefit of the TTBER if it is found that the agreement does not satisfy the conditions of Article 81(3) EC.¹¹⁶ A withdrawal may be particularly warranted where third parties’ access to the market is restricted due to a network of parallel agreements that contribute to the foreclosure of technologies or the foreclosure of potentially competing licensees.¹¹⁷

The Commission alone may, by regulation, exclude from the scope of TTBER, parallel networks of similar agreements which cover more than 50% of a market.¹¹⁸ Such a measure is not addressed to individual

¹¹² § 25 TTBER Guidelines.

¹¹³ Ibid.

¹¹⁴ § 49 TTBER Guidelines.

¹¹⁵ Commission Regulation 2659/2000, f.n 6.

¹¹⁶ §§ 117-122 TTBER Guidelines.

¹¹⁷ Article 6 TTBER, § 17 Preamble, TTBER and Article 29(2) Regulation 1/2003, f.n 10.

¹¹⁸ Article 7 TTBER.

undertakings. A regulation disapplying the TTBER is addressed to all undertakings whose agreements are defined in the regulation.¹¹⁹

The duration of the TTBER is ten years from its entry into force on 1 May 2004.

3.4 Additional Remarks on the Effects of the Modernisation Programme

The day that TTBER came into force was an eventful day. Ten new Member States¹²⁰ joined the EU and what has been described as the backbone of EC antitrust enforcement for the past forty years¹²¹, Regulation 17/62, was replaced by Regulation 1/2003. The effect of Regulation 1/2003 is a decentralisation of the EC competition law enforcement, a devolution of enforcement from the Commission to NCAs and national courts, allowing the Commission to concentrate its resources on other aspects of antitrust enforcement such as cartels and abuses of dominance.

Regulation 1/2003 brings forth several modifications one of which is of particular relevance to the topic at hand. Regulation 1/2003 abolishes the system of notification and replaces it with a system of self-assessment. This system arguably erodes the legal certainty which was provided by the system of notification.¹²² This is unfortunate in light of the TTBER and its Guidelines' conceptual complexity. Neither TTBER nor the Guidelines provide clear and comprehensible guidance for when the block exemption applies. Those licensors that realise the complexities of the block exemption will be left in a legal lurch, as they do not have the possibility of notifying an agreement that they are uncertain about whether it falls under the block exemption. The consequence being that self-assessment of a given technology licence agreement may prove to be an unduly burdensome and risky activity, as the Commission has not watered down the penalties that apply to licences that infringe Article 81 EC. When assessing whether a technology licence agreement falls under the TTBER the parties first need to define the relevant technology and product market. Secondly, they must establish whether they are competitors in any of these markets. Thirdly, they must calculate their market share on the basis of markets affected by the licence agreement. To their aid, the parties have the TTBER Guidelines, not legally binding in nature but most likely followed by NCAs and national courts. As has been mentioned, the TTBER Guidelines do not necessarily

¹¹⁹ §§ 123-129 TTBER Guidelines.

¹²⁰ Poland, Hungary, Czech Republic, Slovak Republic, Slovenia, Latvia, Lithuania, Estonia, Malta and Cyprus.

¹²¹ Fine, f.n 60, at p. 766.

¹²² The Commission has retained the possibility to give Guidance letters, which could be compared to Comfort Letters under Regulation 17/62. However, these guidance letters are also informal in nature and are only possible to obtain in relation to real (as opposed to hypothetical) novel legal questions. See further Commission Notice on informal guidance relating to novel questions concerning Article 81 and 82 of the Treaty. [2002] O.J C101/78.

make the analytical steps the parties need to undertake any easier. If the parties come to the conclusion that the agreement falls outside the scope of the TTBER, another layer of legal complexity is added to their obligation of self-assessment; the Commission notice on the application of Article 81(3) EC.¹²³ The Commission views this notice as a primary filter for the evaluation of *any* agreement for the purposes of Article 81(3) EC.¹²⁴ Thus, one might conclude that the regime of self-assessment is complicated and may prove, *prima facie*, to have counter-productive effects in respect of the application of block exemptions.

¹²³ Commission Notice Guidelines on the application of Article 81(3) of the Treaty. [2004] O.J C 101/97.

¹²⁴ *Ibid.*, at §§ 3-5.

4 Market Definition

“Market definition is a tool to identify and define the boundaries of competition between firms. It serves to establish the framework within which competition policy is applied by the Commission. The main purpose of market definition is to identify in a systematic way the competitive constraints that the undertakings involved face. The objective of defining a market in both its product and geographic dimension is to identify those actual competitors of the undertakings involved that are capable of constraining those undertakings’ behaviour and of preventing them from behaving independently of effective competitive pressure. It is from this perspective that the market definition makes it possible inter alia to calculate market shares that would convey meaningful information regarding market power for the purposes of assessing dominance or for the purposes of applying Article 81.”¹²⁵

As indicated in the aforementioned paragraph, the relevant market¹²⁶ is an important concept in EC competition law. The definition of a relevant market is not an end in itself but an analytical tool that assists in determining the competitive constraints upon undertakings. It aims at establishing the framework within which the Commission applies competition policy.¹²⁷ The process of defining a given relevant market is usually not a straightforward task. The complexity involved in determining the relevant market and assessing the degree of competition within a given industry has led in most inquiries to the adoption of a two-stage process. The first stage comprises of defining the relevant market so as to include products or services, which are considered constituting effective substitutes for those products or services which are scrutinized within the relevant geographic market. The second stage of the process consists of determining market shares and concentration within the defined market enabling the assessment of the degree of competition in that market.¹²⁸

As the subject matter of this thesis is market definition, only the first of the two-stage process will be elucidated in this chapter.

¹²⁵ § 2 Commission Notice on the definition of relevant market for the purposes of Community competition law. [1997] O.J. C372/5.

¹²⁶ The concept of “relevant market” is, for the purposes of EC competition law, different from the general meaning of the word “market” used to describe a place where companies may sell their products or when it is used to as reference to a specific industry or sector. See § 3 of Commission Notice on the definition of relevant market for the purposes of Community competition law.

¹²⁷ However, the Commission acknowledges that although the definition of a relevant market is normally necessary, it may in some instances be possible to show anti-competitive effects directly by analysing the conduct of the parties to an agreement. See § 16 TTBER Guidelines.

¹²⁸ Bishop & Walker, f.n 14, at para. 4.04.

4.1 Principles of Relevant Market Definition

The definition of the relevant market, essentially being an economic concept, is only a useful intermediate tool if it is defined on the basis that is consistent with the aims of competition law.¹²⁹ One of the goals of EC competition policy is the preservation of effective competition, which can be interpreted as preventing certain forms of the exercise of market power.¹³⁰ When an undertaking benefits from market power it encompasses the ability to “*maintain prices above competitive levels or to maintain output in terms of product quantities, product quality and variety or innovation below competitive levels for a not insignificant period of time.*”¹³¹ An undertaking’s ability to exercise market power depends on the price-elasticity of demand facing the undertaking’s product or service.¹³² This partly depends on the availability of substitutes. The definition of the relevant market is concerned with the identification of such substitutes. Therefore, the appropriate basis for defining relevant markets is one that centres directly on the competitive constraints that products or services impose upon one another.¹³³

The importance of properly defining the relevant market should not be underestimated. As has been noted, the practical purpose of relevant market definition is to permit inferences about market power to be drawn from market shares. If the definition of the relevant market is inappropriate so will the subsequent competition law assessment be. The wider the relevant market is defined, the smaller will the market share of a given undertaking be. The smaller the market share of the given undertaking is, the less likely it is that the undertaking possesses market power. As the TTBER’s applicability depends, inter alia, on the market shares of the parties, which presupposes the definition of the relevant market, the crucial role market definition plays becomes apparent. As has been stated; “*much is at stake in the art, or science, of market definition*”.¹³⁴ However, market definition is not unique and it is not independent of the particular competition issue at

¹²⁹ § 10 Commission Notice on the definition of relevant market for the purposes of Community competition law states “*the concept of relevant market is closely related to the objectives pursued under Community competition policy.*”

¹³⁰ Bishop & Walker, f.n 14, at para. 4.05.

¹³¹ § 15 TTBER Guidelines.

¹³² The concept of elasticity of demand, from an economist’s point of view, has two aspects; a product’s/service’s own price elasticity of demand and a product’s / service’s cross-price elasticity of demand. The former measures a product’s / service’s own degree of responsiveness. Using a layman’s explanation, the former measures consumers need to consume the product. Perfectly inelastic goods are goods that consumers need to consume, i.e. water. Perfectly elastic goods are goods that consumers like to consume but do not have to, i.e. ice cream. The majority of products/services are classified somewhere in between these extremes. The latter aspect of elasticity of demand measures a product’s / service’s degree of responsiveness vis-à-vis another product.

¹³³ Bishop & Walker, f.n 14, at para. 4.05.

¹³⁴ Whish, f.n 11, at p. 29.

hand.¹³⁵ Rather, its definition depends on the particular issue under examination. Thus, the relevant market may be delineated differently depending on whether the dispute at hand concerns violation of Article 81 EC, abuse of dominance¹³⁶ or merger clearance.¹³⁷

4.2 The Hypothetical Monopolist Test

The hypothetical monopolist test is the underlying method employed by most competition law systems when defining the markets for purposes of competition law assessment.¹³⁸ The test¹³⁹ also referred to as *the SSNIP*¹⁴⁰ test measures interchangeability by the estimate of cross-price elasticity of demand.¹⁴¹ By using the test to delineate a relevant market, one ensures that all products, which pose a significant competitive constraint on the parties under investigation, are taken into consideration. According to the hypothetical monopolist test, a market is a collection of products in which a hypothetical single supplier of that collection would be able to increase price profitably. In other words, according to this test, the relevant market is worth monopolising.

A market is worth monopolising if the monopolisation allows prices to be profitably increased. This depends on the amount of sales volume lost as consequence of a small but significant non-transitory increase in price.¹⁴² If a SSNIP is deployed for tea and this renders such a decrease in demand for tea that the increase in price leads to a decrease in profits, this should be treated as an indication of that tea is part of a broader product market. If a SSNIP is deployed for tea and coffee and it results in a decrease in demand but not to the extent that it renders the increase in price unprofitable then, according to the hypothetical monopolist test, the accurate relevant product market is the coffee & tea market. The coffee & tea market would be worth

¹³⁵ This was accepted by the CFI in the joined cases T-125/97 and T-127/97 *Coca-Cola Company v Commission* [2000] ECR II 1733.

¹³⁶ Article 82 EC.

¹³⁷ Whereas market definition for the purpose of Article 81 and 82 EC concentrates on existing markets, market definition for the purpose of a merger focuses on how the market will appear after the merger.

¹³⁸ Bishop & Walker, f.n 14, at para. 4.08.

¹³⁹ The concept of market definition was born in US. It was first used in the US courts in 1940s and then primarily in relation to merger cases. The Hypothetical Monopolist Test, also originating from the US, was expressed as an idea probably the first time in 1959 (see Adleman, *Economic Aspects of the Bethlehem Opinion*, Virginia Law Review). Kokkoris I., *The Concept of Market Definition and the SSNIP Test in the Merger Appraisal*, [2005] European Competition Law Review, Volume 26, Issue 4:209-214, at p. 209 and 212.

¹⁴⁰ Small but Significant Non-transitory Increase in Price.

¹⁴¹ This is a measure of the degree of responsiveness of demand of one good to a given change in the price of another good. If the products (good A and good B) are regarded by consumers as interchangeable (substitutes) then the increase in price of good A will increase the consumer demand in good B. If, on the other hand, the products are regarded by the consumers as complements, an increase in price of good A will tend to lead to a decrease in demand of both good A and B. (Pass C. & Lowes B., *Collins Dictionary of Economics*, 2nd Ed. HarperCollins Publishers, 1993, at p. 105).

¹⁴² The small but significant non-transitory increase in price is usually taken to be between 5-10%.

monopolising, as it would allow the hypothetical monopolist to raise prices above competitive levels and make a larger profit. This will only be the situation if the consumers have no other beverages,¹⁴³ which they consider substitutes for coffee and tea¹⁴⁴ therefore they would continue consuming coffee and tea in much the same quantities despite the increase in price. If, however, the demand for coffee and tea would decrease, as a result of the SSNIP, to such an extent that increase in price would thereby be rendered unprofitable, then the coffee & tea market is not worth monopolising and is thus inadequately defined as it does not encompass all the competitive restraints of that market. Then one should perhaps add hot chocolate to the market and perform the test again to investigate whether the coffee, tea & hot chocolate-market is worth monopolising. In effect, the test seeks to establish the smallest product groups as well as the smallest geographic area, within which a hypothetical monopolist, controlling that product group in that area, is able to profitably sustain prices that are higher than the competitive level. Of importance here is the fact that the test focuses on the response of the marginal consumer and not the average consumer. Marginal consumers generally value the product at the price paid and not much more.¹⁴⁵ The test investigates¹⁴⁶ whether enough consumers would switch to a substitute so as to render the increase in price unprofitable, it does not investigate if all consumers would be willing to conduct such a switch.¹⁴⁷ Evidently, the hypothetical monopolist test is not only concerned with price elements. Non-price elements such as the quality of the various products under investigation, characteristics and their intended use form an integral part of the assessment. The test is in essence hypothetical and its practical application does not require a formal econometric analysis.¹⁴⁸

The hypothetical monopolist test is not unproblematic in its application. Firstly, care must be taken in applying the test to prevailing prices to determine whether an undertaking has market power. If the undertaking under investigation has considerable market power, prevailing prices may

¹⁴³ The example used focuses on the demand interchangeability only however, account should also be taken of supply interchangeability and the geographical area.

¹⁴⁴ According to Bishop & Walker, f.n 14, at para. 4.11, there is a subtle discrepancy between the US approach to the test and the EU approach. The US approach investigates whether a hypothetical profit-maximising monopolist would raise prices by more than 5-10% above the levels employed at the time of investigation. The EU approach appears to investigate whether a hypothetical profit-maximising monopolist would make more profits if prices were increased by 5-10%.

¹⁴⁵ Faull & Nikpay, f.n 15, at para. 1.138.

¹⁴⁶ This is normally done by consumer enquiries.

¹⁴⁷ Focusing on the average consumer or captive groups of consumers has been referred to as the toothless fallacy after C-27/76 United Brands Co. and United Brands Continental BV v. Commission [1978] ECR 207. In this case the Commission successfully argued that bananas were a distinct market, and not part of a wider fruit market, as the young and very old did not consider other fruit as substitutes to bananas due to that bananas possessed the characteristics of being soft and seedless. This case inappropriately focused on whether the captive group of toothless consumers would switch to other fruit in response to a rise in prices of bananas. The question that should have been asked is whether enough consumers would switch to other fruit in response to an increase in price in bananas to render that increase unprofitable.

¹⁴⁸ Bishop & Walker, f.n 14, at para. 4.09.

have already been determined in the absence of competition and hence may be above the competitive level. An increase in price, under such conditions, would most likely be unprofitable but not because an accurately delineated market should include some other good, rather it is the high prices that compel consumers to regard some other good as substitutable to the product under investigation.¹⁴⁹ If an accurately delineated market consists of coffee and tea consumers would continue drinking coffee and tea, much in the same manner and quantities, even if prices were to be raised by 5-10%. This is based on the assumption that the increase in price is measured in relation to prevailing prices and those prevailing prices are set at a competitive level. If the prices for coffee and tea are already set at uncompetitive high levels before conducting the SSNIP then consumers might suddenly, when the SSNIP is deployed, regard water as a substitute for coffee and tea. While products may be substitutes at one price level, at a lower price level this might not be the case. Consumers would then not regard coffee, tea and water as de facto substitutes but would do so once the prices for coffee and tea are too high. In the aforementioned situation, a definition of the relevant market, using hypothetical monopolist test, would portray a too broad market definition causing misleading references about a particular undertaking's market power. Secondly, defining a market in strict accordance with the assumptions of the test is rarely possible. Furthermore, there are instances where the hypothetical monopolist test may even be inapplicable due to the absence of some or all the necessary data.

4.3 The Competitive Constraints

The purpose of the Commission's Notice on the Definition of Relevant Market for the Purposes of EC Competition Law¹⁵⁰ (hereinafter the Notice) is to provide guidance as to how the Commission applies the concept of relevant product and geographic market in its enforcement of EC competition law.¹⁵¹ The relevant market is determined by a combination of the product market and the geographic market.¹⁵²

A relevant product market comprises

*“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.”*¹⁵³

¹⁴⁹ This is referred to as the *Cellophane Fallacy* after an US case where the court failed to recognise that the fact that a product produced by an undertaking benefits from high price elasticity of demand may indicate that the firm is already in possession of considerable market power. *US v. E.I du Pont de Nemours & Co* (1956) 351 U.S 377.

¹⁵⁰ Commission Notice on the definition of relevant market for the purposes of Community competition law. [1997] O.J C372/5.

¹⁵¹ § 1 Notice.

¹⁵² § 9 Notice.

¹⁵³ § 7 Notice.

A relevant geographic market comprises of

“the area in which the undertakings concerned are involved in the supply and the 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 appreciably different in those areas.”¹⁵⁴

In order to be able to assess which products in what area the consumer regards as interchangeable that is, belong to the same relevant market for the purpose of competition law, the hypothetical monopolist test is employed. As set out above, the hypothetical monopolist test measures interchangeability by attempting to answer the question of whether a hypothetical monopolist would be able to increase relative prices profitably for a specified set of product in a given area. This will depend on the sales volume that would be lost as a consequence of the increase in relative prices. Assessing the extent of lost sales requires a case-by-case assessment and such an assessment will focus on the competitive constraints that undertakings are subject to. The Notice identifies three main sources of constraints: demand substitutability, supply substitutability and potential competition.¹⁵⁵

4.3.1 Demand Substitutability

This source of competitive constraint is regarded by the Commission as constituting the most immediate and effective disciplinary force on the supplier of a specified product, particularly in relation to their pricing decisions.¹⁵⁶ Demand-side substitution¹⁵⁷ takes place when consumers are in a position to switch to available substitute products or to begin sourcing their requirements from suppliers located in other areas. The easier consumers can switch and meet their requirements through the purchase of substitutes, the greater the change in demand for a collection of products subsequent to a relative price increase. The greater the change in demand the more likely it is that the attempt by the hypothetical monopolist supplier will render the price increase unprofitable. Thus, the product in question would not be worth monopolising and so would not define a relevant market.¹⁵⁸ As stated above, when assessing the change in demand for one product due to an increase in the relative price of that product, the focus of analysis is the marginal consumer. In practice, this implies that considerable care needs to be taken in interpreting the responses of consumers to questionnaires asking how they would respond to relative price changes.¹⁵⁹

¹⁵⁴ § 8 Notice.

¹⁵⁵ § 13 Notice.

¹⁵⁶ Ibid.

¹⁵⁷ The Commission’s notion of demand substitutability is equivalent to an economist’s notion of cross-price elasticity of demand, see f.n 131.

¹⁵⁸ §§ 15-19 Notice.

¹⁵⁹ Bishop & Walker, f.n 14, at para. 4.23.

4.3.2 Supply Substitutability

Although supply substitutability may be relevant to market definition in certain special circumstances, it is normally a matter to be examined when determining whether there is market power.¹⁶⁰ That is, supply substitutability is normally a matter to be considered in the second stage of the process of assessing the degree of competition.

A collection of products may still not be worth monopolising, even if there are no alternative products to which consumers would consider switching. There are instances where consumers may not respond to a relative increase in price but producers may. If other producers respond to a SSNIP by switching production facilities to producing the products supplied by the hypothetical monopolist, this increase in the level of supply may render any attempted price increase unprofitable. In these circumstances, the products under investigation do not constitute the relevant market due to the potential substitution of supply. In order to be able to consider supply substitution in the first stage of the competitive assessment, such substitution must be able to be undertaken in the short run, meaning a period that does not entail a significant adjustment of existing tangible and intangible assets.¹⁶¹ Furthermore, such substitution may not entail significant additional costs or risks.

The special circumstances in which supply substitution may be taken into account in the first stage of the process of assessing the degree of competition is when such substitution has effects that are equivalent to those of demand substitutions in term of effectiveness and immediacy. Such effects will typically arise when undertakings market a wide range of qualities or grades of one product.¹⁶² These products possessing different qualities may be grouped into the same relevant market even though customers do not regard these products as interchangeable. Such supply substitution is conditional on the fact that most suppliers are able to offer and sell various qualities immediately and without significant increases in costs.¹⁶³

In practice, the Commission's approach of whether two products or regions will be included in the same relevant market will depend almost exclusively on the substitutability of demand from the perspective of consumers. Bishop & Walker argue that if the purpose of defining the relevant market is to produce meaningful market shares, the Commission's treatment of supply substitution is inappropriate.¹⁶⁴ A relevant market is defined as a set of products worth monopolising. There are two primary reasons why a set of

¹⁶⁰ § 14 Notice.

¹⁶¹ § 20 Notice.

¹⁶² § 21 Notice.

¹⁶³ Ibid.

¹⁶⁴ Bishop & Walker, f.n 14, at para. 4.32.

products may not be worth monopolising: potential demand substitution or potential supply substitution. They argue that the key is that the “*potential for either form of substitution implies that the hypothesised market is not worth monopolising and therefore should be widened.*”¹⁶⁵

4.3.3 Potential Competition

This third source of competitive constraint lies in potential production capacities in neighbouring geographic and/or product markets that could become actual production in the short run. This source of competitive constraint is however, not taken into account when indulging in the first step of the process of assessing the degree of competition in a given market.¹⁶⁶ The main practical difficulty with this approach is that it requires the assignment of hypothetical market shares to potential producers, of whom only an indefinable proportion may become producers. The assessment of potential competition is more accurately undertaken in the second stage of the competitive assessment. The conditions under which potential competition will provide an effective competitive constraint will depend on the analysis of the characteristics of the market including the likely competitiveness of the market, should a new entrant enter the market.

¹⁶⁵ Ibid.

¹⁶⁶ § 24 Notice.

5 Defining the Relevant Market according to TTBER

When defining the relevant market for the purpose of TTBER, attention should be paid to the Commission's Notice, as this lays down the Commission's general approach to market definition. The TTBER and particularly the TTBER Guidelines only address aspects of market definition that are of particular importance in the field of technology licensing.¹⁶⁷

Technology, the object of technology transfer, possesses specific characteristics that at times make it inappropriate to treat it merely in the same manner as any tangible good. Technology is essentially made up of rights in intellectual property, thus its physical appearance is intangible. It is an input, which is integrated either into a product or production process and consequently, it can affect competition in input markets as well as in output markets.¹⁶⁸ It is therefore necessary to define relevant product market as well as relevant technology market when assessing the competitive effects of a particular technology licensing agreement.¹⁶⁹

5.1 The Relevant Product & Technology Market according to TTBER

Technology licensing can affect competition in both input markets and in output markets. Therefore, for the purposes of assessing the competitive effects of a technology licence agreement it is necessary to define the relevant product and the relevant technology market. The TTBER Guidelines refer to §§44-52 of the Commission Guidelines on the applicability of Article 81 of the EC Treaty to horizontal cooperation agreements,¹⁷⁰ (hereinafter Horizontal Guidelines), as to the distinctions between product markets and technology markets.¹⁷¹

5.1.1 The Relevant Product Market

The relevant product market comprises products, which are regarded by the buyers as interchangeable with, or substitutable for, the products produced with the licensed technology, by reason of the products' characteristics, their

¹⁶⁷ § 19 TTBER Guidelines.

¹⁶⁸ § 20 TTBER Guidelines.

¹⁶⁹ Ibid.

¹⁷⁰ See f.n 67.

¹⁷¹ § 20 TTBER Guidelines.

royalties and their intended use.¹⁷² For the purposes of TTBER, the definition of the relevant product market is equivalent to the definition contained in the Commission's Notice and follows the methodology laid down in the Notice.¹⁷³ The incorporation of a definition of the relevant product market, when this concept is already clearly defined by both the Commission's own notices and by EJC case law, is open to question.¹⁷⁴

5.1.2 The Relevant Technology Market

The relevant technology market includes technologies, which are regarded by the licensees as interchangeable with, or substitutable for the, licensed technology, by reason of the technologies' characteristics, their royalties (the price for the licence) and their intended use.¹⁷⁵

The methodology for defining technology markets follows the same principles as the definition of product markets.¹⁷⁶ The technology markets consist of the licensed technology and its substitutes. When defining the technology market the starting point is the technology that is marketed by the licensor.¹⁷⁷ One needs to identify those other technologies to which licensees could switch to in response to a small but permanent increase in relative royalties. The hypothetical monopolist test is applied in order to be able to delineate the relevant technology market. When this, more traditional, method of defining the relevant technology market becomes too theoretical due to lack of clear information about royalties, the TTBER Guidelines offer an alternative approach to define the relevant technology market. This alternative approach focuses on the market for the products incorporating the licensed technology. The starting point is to identify the products incorporating the licensed technology and these products' substitutes. When calculating market shares under this approach, all sales of on the relevant product market are taken into account, irrespective of whether the product incorporates a technology that is being licensed.¹⁷⁸

Although it will be in the second stage of the process of the competitive assessment, potential competition in the technology market is not taken into account under a TTBER assessment. However, it is somewhat unclear

¹⁷² Article 1(J)(ii) TTBER, § 21 TTBER Guidelines. §§ 44-52 Horizontal Guidelines deal with existing markets and competition in innovation in R&D agreements.

¹⁷³ However, for the purposes of calculating market shares, the term product market refers to relevant goods and service markets in both their geographic and product dimension. § 20 Guidelines, f.n 39.

¹⁷⁴ Vollenbregt E. *The Changes in the New Technology Transfer Block Exemption Compared to the Draft*, European Competition Law Review [2004] Vol. 45 Issue 10:660-665, at p. 662.

¹⁷⁵ Article 1(J)(i) TTBER.

¹⁷⁶ That is, it follows the methodology set out in the Notice.

¹⁷⁷ Noticeable is that, according to the Horizontal Guidelines, the definition of the relevant technology market for the purpose of R&D agreements is conditioned on that the technology is marketed separately from the products concerned to which they relate, (§ 47 Horizontal Guidelines). The TTBER and the Guidelines do not contain any such condition.

¹⁷⁸ Article 3(3) TTBER, § 23 and § 70 TTBER Guidelines.

whether this is only in relation to the assessment of the competitive relation between the parties or whether it also applies in relation to the assessment of market power once the agreements falls outside the TTBER safe harbour due to exceeding market shares.¹⁷⁹ If potential competition is not taken into account in relation to the competitive relationship between the parties, the TTBER embodies a lenient approach since, for the purposes of TTBER, parties to a technology licensing agreement will only be regarded as competitors if they are actual competitors in the technology market. The consequence of this approach, then, being the application of the more favourable market-share thresholds and less strict hardcore list in instances where the parties to a technology licensing agreement, are merely potential competitors in the technology market.¹⁸⁰ However, if potential competition is not taken into account in the technology market in general, it would imply a more narrow application of the TTBER. This is due to the fact that parties to a licensing agreement are more likely to be deemed in possession of market power if potential competition is excluded from the assessment. It is noteworthy that, when comparing with the Horizontal Guidelines, these guidelines emphasise the importance of taking into account potential competition in technology markets. The reasoning behind this, according to the Horizontal Guidelines, is that *if companies who do not currently license their technology, are potential entrants on the technology market they could constrain the ability of the parties to raise the price for their technology.*¹⁸¹ Arguably, the quoted paragraph in the Horizontal Guidelines concerns R&D agreements and the TTBER concerns technology transfer. However, the question is whether this difference would mandate a less favourable use of potential competition.

5.1.3 Innovation Markets

As has been aforementioned, the TTBER Guidelines acknowledges that some licence agreements may affect innovation markets.¹⁸² The idea behind innovation market is that there may be times when the competitive issue at hand relates to an intermediate market for R&D rather than to a market for goods/services or technology. A characteristic situation being when existing market do not provide a sensible point of departure as the transaction relates to R&D which is expected to result in radical innovation. The innovation market is the up-stream market from technology market and in instances where the R&D is expected to result in radical innovation, the innovation market concept itself may be used as delimiting the relevant market.¹⁸³ Although not precisely defined in the Guidelines, an innovation market should include those things that constrain the ability of an

¹⁷⁹ See § 30 and § 60 TTBER Guidelines.

¹⁸⁰ This more lenient approach is most likely to be the accurate approach. See Glader, f.n 1, at p. 91.

¹⁸¹ § 48 Horizontal Guidelines.

¹⁸² § 25 TTBER Guidelines.

¹⁸³ Glader, f.n 1, at p. 208.

undertaking to exercise market power in R&D.¹⁸⁴ The most apparent manifestation of such power would be the ability to slow the rate of innovation in the absence of competing R&D. There has been considerable disagreement to what extent the concept of an innovation market is a useful tool to aid a competition law assessment. The main reason for the disagreement is that, as this segment of the law is intrinsically fuelled with economic theories and models, there is no economic theory nor can model aptly describe the optimum trade-off between market concentration and innovation. Innovation is essentially a dynamic concept whereas economic models are generally based on static concepts. Thus, in the light of this, the Commission treads lightly by stating that in the majority of cases, where innovation may be deemed to be affected by a licence agreement, the Commission will treat innovation as a source of potential competition.

In order for a situation to arise in which it may be useful to delineate an innovation market, two conditions must be fulfilled. Firstly, the licence agreement must aim at creating a new product which is expected to create a new demand. Secondly, it must be possible at an early stage to identify competing R&D poles. Reference is made to paragraphs in the Horizontal Guidelines dealing with R&D agreements,¹⁸⁵ which are in concurrence with the TTBER Guidelines regarding the condition that, in order for an innovation market to be separately defined, the innovative efforts of a particular industry need to be clearly structured so as to allow the identification of R&D poles. The focus of analysis will then be whether, after the agreement, there will be a sufficient number of credible R&D poles left for competition in innovation to be maintained. That is to say that when a transaction affects R&D directed to a specific new product, the competition law analysis should also be directed at this. Competing R&D poles are then identified on the basis of the particular products that may be the future outflow.¹⁸⁶ The starting point of the analysis will be the R&D of the parties followed by an identification of any credible competing R&D poles. The assessment of the credibility of competing R&D poles will have to take into account, inter alia the;

“..nature, scope and size of possible other R&D efforts, their access to financial and human resources, know-how/patents, or other specialised assets as well as their timing and their capacity to exploit possible results..”¹⁸⁷

A R&D pole will not be regarded as a credible competitor if it cannot be regarded as a close substitute for the parties' R&D effort from the viewpoint of access to resources or timing.

¹⁸⁴ Bishop & Walker, f.n 14, at para. 4.78.

¹⁸⁵ §§ 50-52 Horizontal Guidelines.

¹⁸⁶ Glader, f.n 1, at p. 230.

¹⁸⁷ § 51 Horizontal Guidelines.

In an industry where these conditions are not met, the Commission will confine itself to treating innovation as a source of potential competition.¹⁸⁸ Noteworthy is that, an innovation market assessment, whether it is conducted on the basis of potential competition or on the basis of an actual market definition, will only become an aspect to consider once the licence agreement falls outside the scope to the TTBER.

¹⁸⁸ § 52 Horizontal Guidelines.

6 Defining the Relevant Market of the Hypothetical Firm under TTBER

The Relevant Facts of the Hypothetical Technology Based Start-up Company.

This chapter elucidates how, for illustrative purposes, the relevant market should be defined for a hypothetical firm. The description of the imaginative firm will be basic, focusing on the difficulty the firm may encompass when defining its relevant market. Issues such as the difficulty in gaining early-stage financing or other regulatory barriers that have to be overcome are relevant, important and frequently occurring in high-technology markets. However, such issues, and their particular characteristics, are to a large extent dependent on the industrial sector that the firm belongs to. Thus, in order to be able to give a general overview, and by doing so illustrating the difficulties encountered in the art of market definition, the description of the firm will only be general. The concept of relevant market encompasses a product market (downstream), a technology market (upstream) and a geographic market. The methodology used in this chapter will be the same as that adopted in the previous one. The focus of this chapter is the first stage of the process of assessing the degree of competition in a given market. That is to say that, this chapter will focus on market definition only, leaving the second stage of the process, assessment of market power, outside its scope.

Imagine that the company has recently received a patent for technology Y. The technology Y is revolutionary and has potential applications in several areas however, further research may be needed in order to fully develop Y to its potential applications.¹⁸⁹ As the company is relatively small, it lacks finances as well as full-scale production capacity. Thus, to be able to recoup the investments incurred it has decided to license Y to companies better equipped to commercialise the technology. The licence agreement the company wishes to use contains certain anti-competitive clauses such as grant-back and exclusive territoriality clauses. These clauses are not of the type contained in the hardcore list¹⁹⁰ but may still be regarded as having an anti-competitive effect outside the realm of the TTBER.

¹⁸⁹ A technology transfer agreement that does not contain the purpose of the transfer to produce contract product (products incorporating the transferred technology) will not fall under the application of TTBER but under the R&D Block Exemption.

¹⁹⁰ If any of the clauses in the license agreement would be of the type which is contained in the hardcore list, Article 4 TTBER, the entire agreement would be considered null and void, irrespective of market share.

The relevant market definition will be conducted in relation to two separate situations. In the first situation, the hypothetical firm will license the patented technology to a non-competitor for the production of a known product. In the second situation, the hypothetical firm will license the patented technology to a non-competitor for the production of a product anticipated to create an entirely new demand.

6.1 Situation 1: Technology Transfer Agreement for the Production of Contract Products

The simplest point of departure, for the purpose of assessing a given technology licence agreement's effect on competition, is to define the relevant technology market. Having established the technology market one may precede to defining the product (and geographic market) before calculating the parties' relevant market share in the respective markets.

6.1.1 The Relevant Technology Market

The relevant technology market consists of the licensed technology and its substitutes.¹⁹¹ The methodology for defining the relevant technology market follows the same principles as the definition of product markets. That is, it follows the methodology set out in the Commission's notice on the definition of the relevant market (Notice). As was shown in the previous chapter, for the purpose of market definition, three sources of competitive constraint should be taken into account: demand substitution, supply substitution and potential competition. However, in relation to defining the technology market for the purpose of TTBER, potential competition is excluded.

Demand substitution is recognised as constituting the most immediate and effective disciplinary force on a supplier. This aspect of the assessment concentrates on identifying the technologies licensees regard as interchangeable to the one possessed by the hypothetical firm having regard to the licensed technology's characteristics, royalties and intended use. For the purpose of this section the technology that is being licensed, will be referred to as "Y". One needs to identify those technologies licensees could switch to in response to a small but permanent increase in the royalties (SSNIP) of technology Y. This naturally depends on available substitutable technologies (cross-price elasticity of demand) as well as the degree of demand for technology Y (own-price elasticity of demand). In practice, this is a speculative experiment not too complex to perform. However, the speculative findings need to be supported by evidence and this may prove to be burdensome to obtain, since this assessment is normally based on

¹⁹¹ § 22 TTBER Guidelines.

customer enquiries. In this situation, it would have to be done on the basis of licensee enquiries. If an industry is transparent then such information should not be too difficult to obtain, not even for a small firm, inexperienced in these issues. However, if the industry is not transparent and even secretive then the obtainment of such information may prove to be difficult.

An alternative approach is to look at the market for products incorporating the licensed technology and use that as a starting point in defining the relevant technology market. Such an assessment should then focus on the end customer. The relevant question to ask is to what other products could the end customer switch to in response to a small but permanent increase in price of the product incorporating technology Y. The technologies incorporated in those other products would then be regarded as substitutable technologies to technology Y, and together with technology Y, as constituting the relevant technology market. Again, to obtain information regarding customers' preferences may be difficult and costly, particularly for a small and inexperienced firm. Noticeable is that under this alternative approach, in-house technologies are included when defining the relevant technology market. While this approach actually captures potential competition from undertakings producing with their own (unlicensed) technologies, the approach is only available if the licensed technology is used to produce product, that is; there has to be an actual product market.

According to the Notice, supply substitution will normally be regarded in the second stage of the competitive assessment unless, supply substitution poses an immediate and disciplinary force comparable to that of demand substitution. This is, according to the Commission, typically only the case when firms market a wide range of qualities or grades of one product. Obviously, a situation like that described is not likely to occur in relation to IPR protected technology. It is therefore difficult to imagine a situation where a technology may be divided into different qualities or grades. Furthermore, technology that is protected by IPRs is not freely accessible. This fact renders it difficult to fulfil the condition of immediacy as well as the condition that no significant costs may be incurred. As Bishop & Walker has pointed out¹⁹², having considered one of the two forms of substitutions, considering the other can only widen the definition of the relevant market, such an additional consideration will never imply that the market should be narrowed again. It is therefore regrettable that the Commission only on specified occasions considers supply substitution when delineating the relevant market as the effect of this is to disregard the fact that a relevant market may be wider than if only demand substitution is taken into account. This is particularly misguided since the applicability of TTBER depends on the market shares of the parties and not on an assessment of their market power. The consequence of this is that supply substitution will only be a relevant competitive constraint to take into account once a given licence agreement has fallen outside the scope of TTBER's application.

¹⁹² Bishop & Walker, f.n 14, at para. 4.32.

If the licence agreement falls outside TTBER, or when there is no reliable data enabling a relevant technology market definition, the second safe harbour comes into play. In practice, this alternative safe harbour, only creates a negative presumption that the agreement does not infringe Article 81 EC if there are four or more independently controlled technologies in addition to the technologies controlled by the parties. These additional technologies must be sufficiently substitutable for the licensed technology at a comparable cost. When assessing whether the alternative technologies are sufficiently substitutable, the relative commercial strength must be taken into account.¹⁹³ The second safe harbour is not a full-blown safe harbour, it aids when assessing the agreement, as the parties will only have to focus on aspects surrounding the agreement that can negate the presumption. It would, however, arguably be easier and more efficient to apply the second safe harbour if it in fact was a full-blown safe harbour, allowing parties to an agreement full reliance.¹⁹⁴

6.1.2 The Relevant Product Market

The relevant product market includes products which are regarded by the buyers as interchangeable for the products incorporating technology Y, by reason of those products' characteristics, their price and their intended use.¹⁹⁵ The methodology for delineating the product market is the same as that employed in the previous section. The three sources of competitive constraints need to be taken into account. Demand substitution is the main source used to identify the product market. Supply substitution and potential competition is taken into account in the second stage of the competitive analysis,¹⁹⁶ effectively once an agreement has fallen outside the application of TTBER.

The starting point is the buyers of products incorporating technology Y. The hypothetical monopolist test is used to identify those other products that the buyers regard as substitutes. The focus is on the marginal consumer, the consumer that values the product incorporating technology Y at the relative price but not more. The aim of this speculative enquiry is to determine the market that is worth monopolizing. As long as there are enough buyers that would switch to other goods rendering the SSNIP unprofitable, the market is not properly delineated. The more substitutes can be identified the wider will the definition of the relevant market be. The wider the relevant market, the smaller a given party's market share. The parties should attempt to support findings with some sort of empirical evidence. The nature of the empirical evidence will depend on the industry in question. The

¹⁹³ § 131 TTBER Guidelines.

¹⁹⁴ It has been indicated that the alternative technology safe harbour that the US IP Guidelines offer, is widely relied upon by industry. (See Glader, f.n 1, at p. 322.)

¹⁹⁵ § 21 TTBER Guidelines.

¹⁹⁶ § 14 Notice.

Commission does not follow a rigid hierarchy of different sources of information or types of evidence.¹⁹⁷

6.1.3 The Relevant Geographic Market

When defining the relevant technology and product market account has to be taken of the relevant geographic area. Much the same factors used in delineating the relevant product market can be used when defining the relevant geographic market. Particularly, attention should be paid to whether the conditions of competition are sufficiently homogenous and to what extent they can be distinguished from neighbouring geographic areas. When determining the geographic market, factors such as regional preferences, product prices, consumer preferences and transportation costs should be taken into account.

The Commission's approach to the geographic market definition is based on broad indications of the area in which the parties' market shares are distributed.¹⁹⁸ This is used as a working hypothesis. The working hypothesis is checked against an analysis of demand characteristics such as importance of national or local preferences, patterns of purchase of customers and product differentiation; the list is not exhaustive.¹⁹⁹ The purpose is to establish whether companies in different areas actually constitute a real alternative source of supply for customers. When defining the relevant geographic market, the parties to a licence agreement should follow the same approach. In practice, this is most easily determined by investigating the distribution of the parties' market shares.

6.2 Situation 2: Technology Transfer Agreement for the Production of a "New" Product

In this situation, the hypothetical firm considers licensing the patented technology for the production of a product that constitutes a new generation of products, believed to create a new demand. In such a situation, the licence agreement will have effects on a technology market and a product market but it may also have effects on an innovation market.²⁰⁰ The Commission states that it will normally confine itself to examining the impact on existing markets. Parties to an agreement should then follow the methodology in defining the respective markets in the same manner as has been described under "situation 1". The effect that the agreement is believed to have on innovation markets will be taken into account under the second stage of the

¹⁹⁷ § 25 Notice.

¹⁹⁸ § 28 Notice.

¹⁹⁹ § 29 Notice.

²⁰⁰ § 25 TTBER Guidelines.

competitive analysis. That is, innovation is treated as a source of potential competition when assessing the impact of the agreement on the product market and the technology market.

6.2.1 Defining the Innovation Market

The Commission is of the belief that in a limited number of cases it may be useful and necessary to define an innovation market. The conditions that will warrant such an assessment are a) the license agreement affects innovation aiming at creating new products and b) the industry it affects is structured in a way where it is possible to identify R&D poles at an early stage. That is, the agreement must affect the innovation aiming at creating a new product in a transparent industry. Transparent industries are generally those that contain long R&D cycles such as the pharmaceutical, the medical equipment and the biotechnological industry.²⁰¹

The starting point is to identify the relevant R&D²⁰² of the parties. Then credible R&D poles need to be defined. That is, one needs to define the R&D aimed at developing substitutable products or technology for those developed under the licence agreement. These credible R&D poles need to have comparable access to resources as well as a similar timing.²⁰³ In order to assess the credibility of competing poles one has to take into account the nature, scope and size of these competing poles. Factors such as their access to financial and human resources, know-how/patents and their capability to exploit results need to be taken into account.²⁰⁴ After having identified credible competing R&D poles, the Commission will make an assessment if after the agreement there will be a sufficient number of R&D poles left. Whereas competition in general is difficult to measure, competition in innovation is even more difficult to evaluate. Whether the appraisal of competition is based on exact concentration rates or in terms of more qualitative and structural variables, the central question surrounding innovation markets is how many competing R&D project are required for an innovation market to be competitive? The Commission does not answer this question. Perhaps guidance may be found in § 131 TTBER Guidelines where it is stated that Article 81 EC is unlikely to be infringed if there are four independently controlled technologies in addition to the technologies that are controlled by the parties to the agreement that may be substitutable for the licensed technology. However, this Guideline refers to the appraisal of competition in a technology market and not an appraisal of competition in an innovation market.

²⁰¹ In these industries the R&D cycles are long and closely linked to important IPRs. This enables strategic behaviour which may affect competition negatively. (Glader, f.n 1, at p. 99.)

²⁰² The relevant R&D is the R&D that is the basis for the production of the new generation product.

²⁰³ § 51 Notice.

²⁰⁴ Ibid.

Competition policy with respect to innovation parameters is concerned with the exercise of market power in such a way as to slow the pace and variety in the development of products and technologies. As the character of innovation and the mechanisms of appropriation vary from industry to industry, general conclusions regarding technological opportunities do not offer much guidance.²⁰⁵ Nevertheless, concerns regarding an undertaking's ability to slow down the rate of R&D are believed to be addressed if there exists a number of substitutable R&D poles. However, whether a concentration in R&D is problematic or not should depend on the credibility and relative importance that can be attributed to the competing R&D poles.²⁰⁶ The reason for this is based on the idea that the substitutable R&D poles are believed to pose such a degree of competitive constraints that they would render the exercise of market power in relation to innovation unfeasible. This assumption is based on the idea that competition in an innovation market has the same effects as in a product market. Despite the fact that one cannot be certain that a combination to monopoly would necessarily lead to anti-competitive reductions in innovation, one can conclude that it is not likely that a secure monopoly position in R&D is advantageous for inducing efficient performance.²⁰⁷ Furthermore, one can assume that monopolists are not known to be the best motors of technological effect.

Concluding; if the aim of the licence agreement is to produce radically innovative products and the industry to which the parties belong is transparent and structured so as to allow identification of competing R&D poles, the parties will have to define the relevant innovation market. That is, the parties need to identify R&D poles, which according to them are substitutes to the technology they are using to produce the new generation product. That is, if the parties to the license agreement can identify at least four realistic R&D competitors it may be likely that the agreement will not be held to infringe Article 81 EC. It is, however, regrettable that while including the innovation market concept in the TTBER Guideline, the Commission has not created a third safe harbour linked to the concept, nor offered a clear negative presumption based on it. Generally, whenever something is defined in law has the effect of a more stringent application of the law. In this situation, the Commission had the chance of making the law less stringent, if the innovation market concept was linked to a third safe harbour or even a clear negative presumption. Above all, it would have made the practical application of the TTBER less complex and more efficient particularly in situations where one does not know the exact appearance of the future product market (no relevant product market) and there is not other competing technology that is being licensed (no relevant technology market).

²⁰⁵ Glader, f.n 1, at p. 54.

²⁰⁶ Ibid, at p. 87.

²⁰⁷ Glader, f.n 1, at p. 327.

6.3 Additional Remarks

The fact that an agreement falls outside the scope of TTBER should not have any bearing on the initial relevant market definition. However, as has been indicated throughout this chapter, it will have bearing on the second stage of the competitive assessment. If an agreement falls outside the scope of TTBER, it needs to be assessed under Article 81 EC. An Article 81-assessment is not concerned, *prima facie*, with the parties' market share rather, it is concerned with the parties' ability to exercise market power. Under such an assessment, aspects of supply substitution and potential competition have a larger impact on the determination of the ability to exercise market power. The discrepancy in the assessment of the second stage of the competitive analysis is a downside to the use of market thresholds, particularly since the relevant market is defined on the base of demand substitution only. The intention with TTBER is to promote the dissemination of technology. One way of achieving that goal is by making rules applicable to technology transfer agreements easy and straightforward to apply. Instead, the TTBER is complex and has the effect of forcing those parties that find themselves outside the scope of the TTBER to conduct another assessment under the general rules of Article 81 EC. The question is, bearing in mind that the parties will constantly have to monitor the agreement throughout its life cycle, whether this is not contra-productive in the sense that it is inefficient and burdensome to require parties to make multiple assessments for the same purpose. This particularly in light of the fact that neither the second safe harbour is a reliable harbour nor the innovation market concept is linked to any clear negative presumption.

7 Analysis

There is a growing awareness among competition policy makers of the importance of economics, as demonstrated in Europe by the Commission's modernisation programme where emphasis has been put on conforming legal acts to a more economic-based approach. Competition policy is an economic policy concerned with economic structures, economic conduct and economic effects. However, economic thinking and economic models are not perfect guides as they are built on and around assumptions.²⁰⁸ Notwithstanding the fact that economic models cannot give clear answers as to the effects of real world situations, they do offer useful guidance in the shape of concepts and models that can be applied to real world situations in order to be able to foresee the consequence of a given transaction in a given situation.

7.1 The Harvard School

The Harvard School represents the first framework of economic theory with real impact on competition policy.²⁰⁹ The main result of this school of thought is the Structure-Conduct-Performance (SCP) paradigm. In its simplest form the SCP paradigm explains that market structure determines companies' market behaviour, which in turn determines market performance. Under this school of thought, the study of any given undertaking's behaviour is irrelevant, as it is the market structure²¹⁰ that is responsible for the final market outcome.²¹¹ The main policy conclusions flowing from the simple SCP scheme has been that competition policy should concentrate on structural remedies. That is, under this school of thought, competition policy should concentrate on preventing market concentration. The market thresholds contained in the TTBER are an echo of Harvard School thinking.

7.2 The Chicago School

The SCP framework was questioned and reversed by what came to be called the Chicago School. This school of thought showed that the relationship between concentration, entry barriers and above-normal profits was not as stable as the Harvard School claimed it to be. The Chicago School held that the focus of attention should not be on the supposed link between

²⁰⁸ Faull & Nikpay, f.n 15, at para. 1.02.

²⁰⁹ Glader, f.n 1, at p. 55.

²¹⁰ This idea is based on empirical studies conducted by the "father" of the SCP paradigm, Joe S. Bain. He found that concentrated markets with high barriers of entry showed above-normal profitability.

²¹¹ Faull & Nikpay, f.n 15, at para. 1.09-1.10.

concentration and high profits. The proponents of Chicago-type approach asserted that concentration was the result of efficiency.²¹² Central to this reasoning are economies of scale and the general belief that competition forces some companies to become superior in terms of efficiency; the winners are those undertakings that succeed in becoming the most efficient in a given market. This efficiency causes these undertakings to grow more rapidly than their competitors. They grow faster, acquire larger market shares and make high profits.²¹³ According to the Chicago school, concentration is not a problem and competition policy should not focus on structural remedies. Competition policy concerns should be directed towards preventing behaviour such as collusive price increases and restrictions on output.

7.3 Post-Chicago Developments

The Chicago School forced a reconsideration of the SCP framework that as a consequence has been extended and refined.²¹⁴ It has been accepted that conduct is not a negligible factor when it comes to explaining performance. It is now widely understood that conduct and performance may help shape the market structure. Furthermore, there is also renewed attention to the behaviour of undertakings and to the ways in which the strategic actions of undertakings may affect market structure through creation of entry barriers and changes in technology.²¹⁵ While structural conditions can be used to describe safe harbours (situations in which anti-competitive behaviour is unlikely), to find anti-competitive situations usually requires the analysis of structural, behavioural and performance aspects. This is particularly true under Article 81 EC where it is not enough to show that the market structure enabled anti-competitive conduct. One has to show that the conduct itself or its effects are anti-competitive. Although the post-Chicago developments fit well with the more technical and less ideological approach of the last decade, it has not led to robust outcomes useful for competition policy.

7.4 Static v Dynamic Welfare Analysis of Market Power

The point of departure when discussing competition law is the economic model of perfect competition, which is an integral part of the static welfare analysis. In this equilibrium, resources are allocated and used optimally. That is, both allocative and productive efficiency is inherent in this model.

²¹² Faull & Nikpay, f.n 15, at para. 1.13.

²¹³ Glader, f.n 1, at p. 56.

²¹⁴ Faull & Nikpay, f.n 15, at para. 1.15.

²¹⁵ Glader, f.n 1, at p. 58.

Allocative efficiency²¹⁶ occurs when the price for each product is set at the lowest real resource cost of supplying that product. This price includes a normal profit reward for the supplier. This ensures, according to the model, an optimum level of allocation of scarce resources so as to produce the combination of goods and services that best accords with the pattern of consumer demand.²¹⁷ Productive efficiency denotes the efficiency of a market in producing current product at the lowest possible cost in the long run, using existing technology.²¹⁸

In order for the model of perfect competition to apply certain conditions must be fulfilled. Firstly, there must be a large number of players in the market. That is, there has to be a large number of buyers and a large number of suppliers. Secondly, the condition of perfect information needs to be fulfilled, this in relation to both consumer and suppliers. Consumers with perfect information need to act rationally using the information to maximise their preferences. Producers with perfect information need also act rationally using the information to maximise their profits using perfect production functions. Finally, none of the market players, whether buyer or supplier, can be strong enough to be able to exercise market power.

In real life these conditions are rarely satisfied, if ever. Thus, the model of perfect competition serves merely as a guide. Nevertheless, it is realised that deviation from the model may produce distortions in allocative and productive efficiency.²¹⁹ A situation of perfect competition is the opposite from a situation of monopoly, which under the static welfare analysis is regarded as a market failure. Market failure occurs when a given market fails to achieve an optimum resource allocation. When monopoly suppliers dominate markets, the probability of market failure is particularly high. Thus, under the static welfare analysis, there is a clear total welfare loss associated with the exercise of market power.

However, static welfare analysis is a snapshot market theory. It has no time dimension due to the fact that it involves looking at an equilibrium situation. It is unable to incorporate technological development or product innovation. The static welfare analysis is concerned solely with the allocation of resources in the context of fixed technology and a given cost situation. Hence its name. In life, product markets evolve over time through technological discoveries and introduction of new and improved products. Such innovation generates welfare gains through dynamic efficiencies. That is, it generates welfare gains through efficiencies incorporating technological change over time. The question then arises as to whether

²¹⁶ Also called pareto-efficiency. A pareto-efficient situation is a situation where it is impossible to change so as to make at least one person better off. Allocative efficiency concerns the satisfaction of individual preferences. (Cooter & Ulen, f.n 36, at p. 16).

²¹⁷ Pass C. & Lowes B., *Collins Dictionary of Economics*, 2nd Ed. HarperCollins Publishers, 1993, at p. 14.

²¹⁸ Ibid, at p. 436.

²¹⁹ Glader, f.n 1, at p. 33.

market structure²²⁰ affects the rate of innovation over the long run. If it does then a proper welfare analysis of market power needs to incorporate both static efficiency and dynamic efficiency and any trade-off between them. Having said this, one needs to acknowledge that a formalised market model for achieving dynamic efficiencies does not exist. Nevertheless, there are commentators that claim that innovation is spurred by monopoly. The first to propound a theory based on the idea that market power is more important than competition in providing circumstances under which innovation occurs was the Austrian economist J.A Schumpeter.²²¹ According to Schumpeter, competitive markets without barriers to entry will provide little incentive to make innovations. This is due to the fact that the profits gained by innovating ahead of other undertakings will be short lived. If there are high barriers of entry there then there will be undertakings with market power. These undertakings will also have resources and incentives to make major innovations that will produce large short run profits. These large profits will act as an incentive for other undertakings to enter the market. Such entry by other undertakings will carve away the large profits, a process Schumpeter called “creative destruction”. In this view, the short run misallocation of resources is contrasted to the welfare gains through innovation in the long run. The conclusion derived from this line of thinking is that the welfare loss from the short run misallocation of resources is less than the welfare loss would be if innovation were not spurred.

Despite the lack of an empirically proven relationship between market structure and innovation²²², it is largely recognised that the driving force behind innovation is the quest for profits. There must be adequate incentives for market actors to invest in risky and often long term innovation projects.²²³ The model of perfect competition would in practice mean that large sunk costs incurred during the innovation process would never be recouped. On the other hand, in a model of monopoly, an undertaking lacks the incentives to engage in the development and dissemination of technology.

Thus, the logical conclusion, at least theoretically, is that the optimum of market power lies somewhere in between perfect competition and monopoly. Product innovation will occur if undertakings earn more than just enough to offset their investments. Undertakings will invest if they anticipate making profits in excess. High market shares and even temporary monopolies should be seen as a sign of successful product development rather than an indication of market failure. Instead of seeing the large profits gained as above normal profits they should be regarded as reward for the

²²⁰ That is whether the market is structured as a perfect competition market, oligopoly market or monopoly market.

²²¹ Schumpeter J.A., *Capitalism, Socialism and Democracy*, (1942).

²²² Numerous investigations have been conducted to test whether the size of undertakings, industry concentration and market power systematically account for the greater part of innovation across industrial sectors. However, conclusive evidence has not been produced.

²²³ Glader, f.n 1, at p. 34.

successful management and product development necessary to give incentives to take more innovative risks.

Innovation and technological change creates pressure on all market actors. Not even an undertaking possessing a high market share can afford to stand still in an innovative and cost reducing environment. In a dynamic market, an undertaking with a high market share would quickly lose that position if it failed in product and process development. Competition is still necessary although one should make a distinction between competition in the market and competition for the market. Static price competition is vital between producers *in* a market characterised by homogenous products. However, in technology-intense markets, competition frequently occurs between actual and potential producers of a new improved product. Such competition is *for* the market. In light of this, Evans and Schmalensee²²⁴ put forward three important implications for antitrust assessment. First, the rational expectation of significant market power for some time is a necessary condition for innovative competition to exist in technology intense industries. The presence of market power in the short run is not a symptom of market failure that will harm consumers. Second, one should expect market leaders in technology intense industries to charge price above the accepted marginal cost. This enables them to earn high profits. This should be regarded as natural in dynamic competition: high profits are the reward for the risks they have borne. Third, the key determinant of the performance of technology-intense industries is the vigour of dynamic competition. An explicit investigation of present and likely future dynamic competition is “*essential to sound economic analysis of Schumpeterian industries*”. In a dynamic model, anti-competitive market power consists in the power to control and possibly reduce continuous development of products and technologies.

7.5 Analysing TTBER

In EC competition law a system of assessment has evolved that begins with market definition and proceeds to the determination of market power, and only then focuses upon any perceived anti-competitive behaviour and its consequences. Intellectual property is the engine of growth in most technology intense-industries. This indicates that the licensing of intellectual property is an extremely important, if not an essential pre-condition for growth.

The purpose of the TTBER is to facilitate the dissemination of technology by simplifying the regulatory framework and its application to licence agreements. Whether the TTBER achieves this aim is questionable.

²²⁴ Evans D.E & Schmalensee R., *Some Economic Aspects of Antitrust Analysis in Dynamically Competitive Industries*, Working Paper 8268, May 2001, NEBER Working Paper Series, at p. 16. Available at <http://www.nber.org/papers/w8268>, last visited 2006-02-20.

However, as has been shown, the regulatory framework of the TTBER is complicated and at times, even difficult to apply. Nevertheless, when focusing on the concept of market definition one has to acknowledge that it follows the traditional methodology of the concept of market definition for purposes of EC competition law. As licence agreements affect both product markets and technology markets, it is not unreasonable to define a relevant market in those terms. However, the possibility of having to define the relevant innovation market warrants a deeper analysis.

The Commission reserves the right, where it is found to be necessary and useful, to define innovation markets. This naturally raises the question when is it necessary and useful to define innovation markets, an issue which was elucidated in a previous chapter and will not be further examined here. However, one should raise the question of whether definition of the relevant innovation market is at all necessary in relation to technology licensing.

There has been considerable debate over the usefulness and meaningfulness of the concept of innovation markets. This question has been vigorously debated in relation to merger analysis where it arguably raises concerns that are more acute. Commentators seem to be unable to reach a consensus in this matter. Those commentators that are positive toward an innovation market concept argue that when analysing the competitive effects, actual or potential competition in existing markets may fail to capture the consequences of alteration in innovative effort²²⁵ particularly if the transaction concerns a distant future product market. Those commentators that are against an innovation market approach argue that innovation is difficult to measure and R&D is merely a proxy for innovation. A larger amount of independent and substitutable R&D poles does not necessarily mean better innovation. As there does not exist a clear theoretical or empirical link between current R&D effort and future innovation, it can then be argued that it is purely speculative to relate any change in an R&D market to potential changes in future competition. Furthermore, since R&D is an input and not an output, reducing the level of R&D is not equivalent to a monopolist constraining quantities in an output market. The commentators against an innovation market approach argue that since there is no empirical evidence that suggests that an increase in concentration of R&D will always lead to less R&D, one cannot infer that concentration in R&D efforts will always affect future prices²²⁶ or the variety of future products.

Licensing of technology is a common feature of technology-intense industries.²²⁷ Such industries are subject to rapid technological change. Much of the licensing that occurs in these industries, occurs between competitors, reflecting the fact that the most obvious client for cost-saving

²²⁵ Gilbert R.J & Sunshine S.C., *Incorporating Dynamic Efficiency in Merger Analysis: The Use of Innovation Markets*, Antitrust Law Journal, 1995, Vol. 63.

²²⁶ Rapp R.T., *The Misapplication of the Innovation Market Approach to Merger Analysis*, Antitrust Law Journal, 1995, Vol. 64.

²²⁷ Faull & Nikpay, f.n 15, at para. 1.124.

innovation is the competitor of the innovator in the same industry.²²⁸ Both the undertaking in possession of a large market share and the smaller competitor have incentives to develop innovations that will also benefit other undertakings' cost structure. However, this is conditional on competition authorities permitting licensing between competitors and on the fact that licensing income is sufficiently high to permit the licensor to face a more efficient rival. In light of this and the fact that the optimal level and ratio of R&D is unknown, one can argue that the concept of innovation market in TTBER should be abandoned, particularly in view of the fact that the innovation markets concept attempts to capture the principles of product market analysis based on market power. As has been illustrated above, such an analysis may not be apt in relation to dynamically competitive markets. It is impossible to predict the effect of a change in structure of an innovation market on the level of R&D activity. Thus, legislative measures affecting such structural change should be deployed with care.

However, one could also argue that, instead of abandoning the concept as such, one could modify its application and transforming it either to a clear negative presumption or to a full-blown third safe harbour. Technological licensing should be facilitated. A third safe harbour based on an innovation-centre approach would make the application of TTBER more straightforward and more lenient. This would be in accordance with the aim of TTBER as well as in line with the Lisbon Strategy. The method the Commission has chosen to use the innovation market concept has the consequence of attempting to prophylactically prevent a situation where an undertaking possessing market power may slow the pace of innovation. In doing so, it is in effect punishing parties that wish to licence technology for a potentially illegal future activity. If a third safe harbour was deployed, any anti-competitive concerns that may arise could be dealt under Article 82 EC as a case of abuse of dominance. Particularly since this article takes precedence over any block exemption regulation.

²²⁸ Ibid.

8 Conclusion

It is difficult to overstate the importance of technology licensing or the complexity of the competition law issues it raises. The aim of TTBER is to facilitate the dissemination of technology in order to promote innovation and spur economic growth, by simplifying the regulatory framework and its application to technology licensing.

As the application of TTBER is limited by market thresholds, the definition of the relevant market becomes crucial. The TTBER requires that markets be defined in terms of both product (incorporating the geographical market) and technology markets. This is due to the fact that technology is an input thus, a technology transfer agreement for the production of contract products affects both the product market and the technology market. The methodology of defining the relevant market follows the Commission's traditional market definition set out in the Commission Notice of market definition for purposes of EC competition law. Defining the relevant market for the purposes of EC competition law is complicated: it is essentially a speculative assessment supported by evidence. The TTBER does not make this assessment more complicated than it already is but it does not make it any less complex and in this respect, at least, it seems reasonable to question the extent to which the regulatory framework can be said to have been simplified. Furthermore, in certain situations, an innovation market will have to be defined. The author is of the view that the methodology the Commission has deployed the concept of innovation markets is too careful. The Commission forces the parties to an technology transfer agreement to be aware of a potential innovation market without giving clear guidance at what point it will regard anti-competitive concerns to arise in it. It appears that the Commission has aimed at creating a negative presumption without daring to do so. The consequence of the Commission's carefulness is to further complicate an already complex legal act.

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