



FACULTY OF LAW
Lund University

David Jackson

Defining the Relevant
Market in EU
Concentration Cases -
Applied to the plate heat exchanger
industry

An essay describing the legal regime governing market definition, particularly concerning concentration cases having a Union dimension. The author high-lights difficulties under the current legal regime, consisting mainly of the EU Commission's Relevant Market Notice and case law. It is concluded that though this gives some guidance, case-law and doctrine indicate that parties will be able to argue far beyond the limits indicated by its provisions, thus allowing great uncertainty. Having described the legal regime, an example line of argumentation is presented, based on the market as perceived by actors in the plate heat exchanger industry. The essay is concluded by a critical analysis of the system as it is found during the course of the essay.

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Summary

This essay describes the legal regime governing market definition, particularly of concentrations having a Union dimension. Its findings are applied to an analysis of the plate heat exchanger (PHE) industry to produce an example of how such argumentation might be conducted. Consequently, background information on the PHE industry is presented in chapter 2. Presented there are also two separate technologies (shell & tube and air heat exchangers) that might be of relevance in considering possible sources of competition.

Following this, the law regulating market definition is outlined. This is one of the more complicated areas of antitrust, within as well as outside the EU. The Merger Regulation (Regulation 139/2004) sets out rules on how to define the legality of a concentration through investigating whether that concentration will create a dominant market position or strengthen one that already exists. However, it does not explain how to decide on which market that position is to be considered. On this subject there is of yet no hard law.

Instead, the main instrument in this pursuit is the Relevant Market Notice (RMN), a summation of the EU Commission's experiences up until 1997. The RMN brought some order to the area, previously entirely covered by case law, as well as some important innovations. However, it has proven unable to entirely dispel all uncertainties. It is non-binding, non-exhaustive and, though influential on the application of the law, neither presented any single test for market definition, nor any hierarchy between the very many that are used in practice. Simultaneously, the judicial institutions of the EU have made clear that case law will not be binding either as to result or as to test hierarchy, but only as to the content of those tests.

Nonetheless, there is a loose structure governing the area. Three market dimensions contain up to three sources of constraints. In practice however, only two dimensions are represented in *all* cases, the geographical and the product markets. The temporal market is seldom considered, and where it is, this normally happens whilst considering the product market.

The three sources of constraint, demand-side constraints, supply-side constraints and potential competition, are even less predictable. Traditionally, only demand has been officially admitted as a decisive factor. Supply would supposedly be considered at a later stage, in connection to an analysis of dominance. Potential competition, seen as too speculative in its emphasis on future events, would not be considered at all.

Despite this, practice has shown that supply is indeed decisive on a large amount of cases, as the alternative of only focusing on demand would create unnaturally small markets where dominance would be too easy to establish. Furthermore, there have been claims that potential competition might be too

hard to separate from supply-side consideration to discount entirely. Thus the likely structure of the current system for market definition is one containing three, but normally two potential dimensions, and two sources of constraint, where one contains an element of potential competition in the near future.

Whether one accepts such a stance or not, difficulties still remain. Within the constraints are the large amount of tests mentioned previously, that are used in defining the market. As stated, there is very little order. A major innovation introduced via the RMN was the SSNIP test, aiming to measure the effect of a **S**mall but **S**ignificant **N**on-transitory **I**ncrease in **P**rice on demand. If a hypothetical monopolist of a particular product in a certain area is proven to be constrained in imposing such an increase by customers switching to other products, the relevant market is larger than that product/area.

There is thus plenty of room for arguing a case. This however, would clearly be a complex procedure. Thus, a chapter is dedicated to providing an example of how an undertaking might go about arguing a case for concentration is presented. This takes its starting point in a manufacturer of PHE and is based on the previous presentation of that market segment. It assumes that producers will generally argue for as large a market as possible, as larger would generally mean lesser ability to dominate. The ideal market would consequently be global, encompassing as many competing products as possible as well as producers of goods following similar principles. It is suggested that such argumentation might well be successful, but to what extent will depend very much on the circumstances of the PHE industry at the relevant time.

The final part critically analyses the findings of previous chapters. It questions the soundness of a system that leaves so much to be dependent on argumentation. In the long run, this might cause substantial inefficiencies as increasingly, greater expertise is needed to navigate the system. The growing dependency on economists to perform tests does not alleviate this. Rather it threatens to further complicate matters. Furthermore, as long as the outcome of the law is so uncertain, this uncertainty will constitute a threat to the principles that like cases should be treated alike, and that there should be no punishment for an action that is not clearly made illegal by law, both basic principles of EU law as well as human rights.

Sammanfattning

Denna uppsats beskriver lagstiftningen angående marknadsdefinition, framförallt av koncentrationer unionsdimension. Slutsatserna appliceras sen till en analys av plattvärmväxlarindustrin (PHE) för att producera ett exempel på hur en sådan argumentation kan föras. Följaktligen presenteras bakgrundsinformation om plattvärmväxlarindustrin i kapitel 2. Där presenteras även två separata teknologier (tub- samt luftvärmväxlare) som kan vara av relevans vid en bedömning av möjliga konkurrenskällor.

Efter detta, följer en beskrivning av lagen angående marknadsdefinition. Detta är ett av de mer komplicerade områdena inom konkurrensrätten. Koncentrationsförordningen (139/2004) etablerar regler för hur man fastställer en koncentrations legalitet, genom ett utforskande av huruvida en dominant marknadsställning etableras, eller om en stärks som redan existerar. Emellertid besvarar detta dokument inte hur man bör bestämma på vilken marknad denna ställning ska bedömas. För detta finns ännu ingen bindande lagstiftning.

Istället, är EU-kommissionens tillkännagivande om definitionen av relevant marknad (RMN) det huvudsakliga instrumentet för detta ändamål, en sammanfattning av EU-kommissionens erfarenheter i detta område fram till 1997. RMN förde med sig viktiga innovationer och viss klarhet. Det har dock ännu visat sig otillräckligt för att helt skingra all osäkerhet. Det är icke-bindande och har, trots ett visst inflytande på lagens tillämpande, varken presenterat något enskilt test eller någon hierarki mellan de väldigt många som används i praktiken. Samtidigt har EUs dömande institutioner gjort klart att praxis inte kommer att anses bindande vare sig för slutresultat eller testhierarki, utan enbart vad gäller dessa testers innehåll.

Icke desto mindre, styrs området av en lös struktur. Tre marknadsdimensioner innehåller upp till tre begränsande konkurrenskällor. I praktiken representeras dock endast två dimensioner i *alla* mål, nämligen den geografiska marknaden och produktmarknaden. Den temporala bedöms sällan, och där så sker, görs det normalt i samband med en bedömning av produktmarknaden.

De tre konkurrenskällorna, efterfråga, utbud och potentiell konkurrens, är ännu mindre förutsägbara. Traditionellt har endast efterfråga erkänts som en avgörande faktor. Utbud antogs böra bedömas först senare, i samband med en dominansbedömning. Potentiell konkurrens, som i sin betoning av framtida händelser ansågs alltför spekulativ, skulle inte bedömas alls.

Trots detta har erfarenhet visat att utbud ändå är avgörande i en stor mängd mål, då alternativet, att enbart fokusera på efterfråga, skulle orsaka onaturligt små marknader där dominans alltför lätt skulle kunna etableras. Vidare har det påståtts att potentiell konkurrens är alltför svårt att separera

från utbud för att helt räkna bort. Därmed är det aktuella systemet för marknadsdefinition troligen ett system bestående av tre, men normalt två potentiella dimensioner, och två konkurrenskällor, där en innehåller ett mått av potentiell konkurrens i den nära framtiden.

Vare sig man accepterar denna position eller ej, återstår svårigheter. Inom konkurrenskällorna finns den stora mängd tester som tidigare nämndes, vilka används för att fastställa marknaden. Som nämnts finns där väldigt lite ordning. En viktig innovation, introducerad i RMN, var SSNIP-testet, vars mål är att mäta effekten på efterfråga av en liten men signifikant icke-övergående ökning i pris (**S**mall but **S**ignificant **N**on-transitory **I**ncrease in **P**rice on demand). Om en hypotetisk monopolist av en viss produkt i ett visst område kan bevisas vara begränsad från att införa en sådan ökning genom att kunder byter till andra produkter är den relevanta marknaden större än produkten/området i fråga.

Det finns således i ett mål gott om utrymme för argumentation. Detta skulle dock uppenbarligen innebära en väldigt komplex process. Därför vigs ett kapitel åt ett exempel på hur ett företag kan tänkas argumentera för en koncentration. Detta utgår från en tillverkare av plattvärmeväxlare och baseras på den tidigare presentationen av detta marknadssegment. Det utgår från att producenter generellt kommer att argumentera för största möjliga marknad, då större generellt innebär mindre förmåga att dominera. Den ideala marknaden skulle således vara global, omfattande så många konkurrerande produkter som möjligt, likväl som producenter av varor följande liknande principer. Det föreslås att sådan argumentation mycket väl kan vara framgångsrik, men att utsträckningen kommer bero till väldigt stor del på omständigheterna i PHE-industrin vid det relevanta tillfället.

Den sista delen analyserar kritiskt resultaten från tidigare kapitel. Det ifrågasätter hälsotillståndet i ett system som låter så mycket vara beroende av argumentation. På längre sikt kan detta orsaka betydande effektivitetsbrister, då allt större expertkunskap blir nödvändig för att navigera systemet. Det ökande beroendet av ekonomer för att utföra tester bidrar inte till att underlätta. Istället hotar det att komplicera detta ytterligare. Vidare, så länge lagens resultat förblir osäkert utgör denna osäkerhet ett hot mot principerna om att lika fall ska bedömas lika samt att inget straff skall utdömas för beteende som inte tydligt olagligförklarats, vilka båda utgör grundläggande principer inom EU-rätten såväl som mänskliga rättigheter.

Preface

I dedicate this essay to my parents. To my father, whose guiding hand I will always feel on my shoulder. And to my mother thanks to whose unwavering confidence I have found the courage to challenge perceived limitations. Though I seldom show it, I know that I would not have been here without them.

I also want to thank all the people who helped me in the process of completing this project. Hans-Henrik Lidgard has provided me with invaluable academic input, which has helped develop this essay tremendously. Emma Adlerton, Johan Nordfeldt, Anders Granbom and Mikael Wahlgren at Alfa Laval have also provided insights into the practical consequences of competition law in a manufacturing industry. I am thankful to all of you for your help.

Abbreviations

AHX	Air Heat Exchangers
ECMR	EC Merger Regulation
CJEU	The Court of Justice (Previously known as the European Court of Justice)
EGC	The General Court (Previously known as the Court of First Instance)
HEX	Heat Exchangers
PHE	Plate Heat Exchangers
RGM	Relevant Geographic Market
RMN	The Commission's Relevant Market Notice
RPM	Relevant Product Market
S&T	Shell and Tube Heat Exchangers
SSNIP	Small but Significant Non-Transitory Increase in Price

1 Introduction

1.1 Background

When it comes to competition law, the EU is rather unique. Competition law, only emerging in the 1890s, was long a strictly American phenomenon. The vast majority of legal systems up until the mid-20th century had developed, and would continue developing, absent of any antitrust law.

The advent of European economic cooperation changed this dynamic. Though the long-term effects of forming the Coal and Steel Union were hard to tell at its ratification in 1952, this union strove to create an internal market where companies involved in coal and steel production could compete equally. Its legatees, the EEC and finally the EU, would inherit and expand this goal, to relate to all goods, services, workers and capital. When the Treaty of Rome was ratified the EEC thus became one of the first legal jurisdictions to be born with an explicit reference to antitrust law. The ball had been set in motion for the future EU to become what is today probably the leading motor of innovation in this field.

Competition law however, did not come to the EU in a ready to use package and it is unlikely that anyone could realise then, how important this area of law would become. Many areas that would gain importance in years to come were thus left unresolved.

One of these areas can be found today in the law regulating concentrations. The approach of EU law in this area is pragmatic. Rather than setting strict limits to size and combatting particular behaviours, enforcers consider the relative size of companies in, and their effect on, the market in which they are active. Consequently, in order to know the legality of a concentration, a pivotal issue is knowing on *what market* this will be considered. However, simple as this sounds, the market in competition law is quite different from what we might intend when discussing markets from an everyday, political or even economic perspective. Due to the massive complexity and far reaching consequences of such a task, legislators have yet been unable to once and for all legislate on how to define markets.

The result is that to this day, the area suffers from a remarkable lack of clarity. Official attempts to clarify have failed to create foreseeability. The law is largely non-binding, consisting of guidance instruments and merely indicative case law. Which matters will decide a case will vary greatly with regional issues, legislation and a vast amount of variables of which the hierarchy is at best unclear. Half a century later, EU competition law still struggles to define one of its core elements, leaving it to the parties to argue for a workable market definition in each case. The stakes are high yet foreseeability is lacking. In short, for he who comes prepared, there is much to gain in concentration cases.

1.2 Statement of purpose

The precise purpose of this paper is to investigate what factors will impact the definition of the relevant markets as they relate to concentrations having a Union dimension.

To reach this end result it will first be necessary to clarify the workings of the tests used by EU regulatory bodies in defining markets. Based on this presentation, and the application of these tests on the plate heat exchanger industry, a critical discussion will be held on the functionality of the current legal regime.

This paper is written with substantial aid from Alfa Laval AB, a company in the sale and manufacturing of heat exchangers. Its result however, is not intended to refer strictly to this company or industry. Instead, it will strive to be relevant to all who might be in the business of defining a market under EU law. Such general relevance makes it impossible for this paper to produce any predictions, or firm decisions as to how the market might be defined in any particular case. Instead, it will leave it to the reader to use its findings in order to prepare a line of argument adapted to the circumstances on the market at that particular moment. This author's hope is that the creation of such a line of argument will be facilitated by this dissertation.

1.3 Method

As my purpose is to explain the workings of a particular aspect of EU law in practice, I will be using the traditional legal dogmatic method. The interpretation of this method to which I subscribe strives to separate value judgements from a description of valid law by first interpreting the law and then applying the findings to the issue at hand, in this case in the form of a guide on concentrations in the market segment of plate heat exchangers.

However, every area of law poses its own difficulties. In this area, a particular difficulty is caused by the economic tests involved in establishing the extent of the market. It would consequently be impossible to write this essay without what will be perceived by many as a strong emphasis on economic theory. A large proportion of the essay will contain descriptions of theories that are either entirely econometric, or that relate strongly to such theories.

1.4 Material

Inevitably, when dealing with competition law, one must look at legislation. Regarding concentrations, only secondary legislation is of direct relevance. Of course this includes some hard law supplied, i.e. the Merger Regulation (ECMR)¹, but primarily it will concern soft law, i.e. the Commission's Relevant Market Notice (RMN)².

To ascertain the modes in which mainly the latter works in practice, this author will look closely at some illuminating decisions from the formal adjudicating institutions of the EU, i.e. the European Court of Justice (CJEU) and the General Court (EGC)³, but also Commission Decisions. There has been some debate among scholars⁴ as to whether the latter should be treated as court judgements. However, the vast majority of cases on concentrations with a Union dimension never go further than a Commission Decision. For most of the area of market definition, this is the only "case law" applicable, which is why it will be given substantial consideration in this dissertation.

The application of this, often sparsely motivated case law is however, dependant on interpretation in doctrine, which thus constitutes another important source of information in this dissertation. Mostly this is found in textbooks on competition law, but also some articles will be looked into. A particularly great debt should be acknowledged, to Alistair Lindsay and Nicholas Scola for their chapter on market definition in "Bellamy and Child: European EU Law of Competition".⁵ Theirs is a work of remarkable clarity and detail.

Doctrine is also relied upon in the section outlining constraint hierarchy. Here, Franz-Jürgen Säcker⁶ is the dominant source of information. Being based partly on German case law, it has been impossible for this non-

¹ Council Regulation (EC) No 139/2004 of 20 January 2004 on the control of concentrations between undertakings

² Commission Notice on the definition of relevant market for the purposes of EU competition law [1997] OJ C372/03

³ References to judgements by these Courts will be made under these names, irrespective of whether these judgments predate the coming in force of the Lisbon Treaty. Prior to this Treaty, they were known as the European Court of Justice and the Court of First Instance, respectively.

⁴ For more information on this, look for Slater, D., Thomas, S. and Waelbroek, D. "Competition law proceedings before the European Commission and the right to a fair trial: No need for reform?" (Global Competition Law Centre Working Paper) as well as Forrester, I.S. – "Due process in EC competition cases: a distinguished institution with flawed procedures" (E.L. Rev. 2009, 817)

⁵ Roth, P. Q.C. and Rose, V. (eds) – "Bellamy & Child: European EU Law of Competition" (6th ed. Oxford University Press, 2008) chapter 4

⁶ Säcker, F.J. – "The Concept of the Relevant Product Market – Between Demand-side Substitutability and Supply-side Substitutability in Competition Law" (Internationaler Verlag der Wissenschaften, 2008)

German speaking author to check the validity of some of the sources referred to in that. Though the main line of argument is not dependant on those sources, the reader should be aware of that fact.

Complementing information has been found in a list of articles and books too long to enumerate here.

Finally, the reader should also be aware of the author's heavy reliance, for information about the structure of the plate heat exchanger industry, on material obtained through interviews as well as internal documents at Alfa Laval, who produces such hardware. Given the sensitive nature of such documentation, there is no ambition in this dissertation to fully disclose such information received.

1.5 Disposition

Following this introduction, this essay consists of six parts.

The first part will contain a brief look at the plate heat exchanger industry, looking at the market as producers and customers are likely to view it. This will take a wide view, in order to later serve as a basis for the example argumentation that will later be presented.

That chapter is followed by an in-depth look at how market definition works, starting with a short chapter on relevant legislation, i.e. the ECMR and the RMN. An outline of how the RMN has been interpreted in practice will follow on this, including a discussion on the importance of the various tests in relation to different market dimensions (product, geographical and temporal) used in practice. The relevance of the perspectives suggested by the RMN (demand-side substitution, supply-side substitution and potential competition) will be explored, including a closer look at the different tests they require. A critical analytic perspective will be applied, to identify differences between theory and practice. The essay's fifth chapter will then summarise the lessons learned about how markets are defined in theory and practice.

The sixth part will strive to give an example of this information by outlining reasonable expectations for a producer of heat exchangers when considering the legal effects of a potential merger or acquisition.

The seventh and final part will then provide some concluding remarks on the subject. This section will strive to provide a critique of how the EU's system for market definition is currently structured in the hope to benefit its further development.

1.6 Delimitation

Market definition is a huge subject, with a potential magnitude that would allow for countless pages of, at least to this author, highly fascinating information. Nonetheless, given the constraints of an academic dissertation, certain limitations must be maintained.

Though many relevant cases are decided in national courts, the focus (with a few noted exceptions) of this essay will be on decisions by EU institutions. The ECMR has direct effect in relevant cases. Thus, given the increasing integration of the European economy, together with a harmonising tendency between EU and national competition regulation, there is no apparent reason to focus excessively on national peculiarities when dealing with competition law from the perspective of a company working in the EU arena. The reader should be careful when applying the conclusions of this essay in the national sphere. As will be made clear, there is no clarity in this area of what tests to apply in what manner. National trends may consequently vary. Nonetheless, such evaluation would require an extension of this essay without causing any greater gain.

Also, though there is indeed an economic perspective to this essay, this perspective does not include a calculation of the economic impact of the current legal regime. Rather, what evaluation is made of economic theory will be limited to how the current legal regime, including several econometric tests, normatively affects the behaviour of those involved in, or contemplating a concentration.

2 Plate Heat Exchangers⁷

This chapter aims to introduce the market for plate heat exchangers (PHE) to the reader. The word “market” in this chapter, will not indicate a market in the strict competition law sense, but rather serves to indicate a rough guide as to the perceptions of PHE producers and customers of likely sources of alternatives. As such it will include not only other plate heat exchangers but also producers of alternative and/or similar technologies.

These views are highly subjective and will seldom be directly influential on the decision taken in a case concerning market definition. In fact, generally, both suppliers and customers will look much further for alternatives than what will ultimately be held as a market in competition law. What is included in this chapter will thus not be decisive on how the market is defined in any actual case, nor on the example in chapter 6, although these views will most likely be highly influential on the line of argumentation taken by the involved parties.

2.1 General

Heat exchangers (HEX), not surprisingly, exchange heat – from one fluid or gas to another. There are two types of heat exchange: direct and indirect. Direct heat exchange occurs by two substances being mixed with each other, whilst indirect heat exchange occurs via a wall separating the two media. The heat exchanger industry concerns the latter type.

The vast majority of industries require some sort of exchange of heat, as an element in production and/or as a function of the product. Customers range from power plants to the food industry. In 2007 the global turnover of the market for heat exchangers was thus estimated around €10bn.

The original method used in this pursuit was the so called shell and tube method (S&T). This method is still the dominant form of indirect heat exchange with about 33 % of the market in 2007. The by far largest competing method was invented in 1931, the plate heat exchanger (PHE).⁸ In 2007 it held 29 % of the HEX market whilst air heat exchangers (AHX) stood for 25 %. The latter are often produced by the same companies producing the others, and follow the same basic principles, but have very different application areas.

There are also other types of heat exchangers making up circa 13 % of the market. They include niched types, like printed circuit and scrape surface heat exchangers. These should be kept in mind when considering the plate

⁷ All statistical data and information in this chapter stem from internal Alfa Laval market investigations.

⁸ This term will be used rather than the more ambiguous term, compact heat exchanger.

heat exchanger market as they sometimes compete with other types. However, where this is the case, they do so marginally and in limited circumstances. Therefore none of these types will be discussed further in this essay.

Cooling towers are often included amongst heat exchangers as they serve a similar purpose. However, they neither compete with PHE, nor do they follow similar principles. There is therefore no apparent reason to include them in a contemplation of the market within the narrow meaning this carries under competition law.

2.2 PHE

PHE function according to simple basic principles. Each consists of two or more thick metal frame plates providing pressure to a collection of plates between them. Several entry points will allow fluids or gases to flow to the inside. The metal plates on the inside are placed to lead liquids into channels flowing in alternating directions, either up or down. Into the channels will be lead two media with different temperatures. As the warmer medium flows downwards on one side of the plate the colder medium flows upwards on the other side. The same pattern will occur in each of the plates of the apparatus, up to thousands of times. This is referred to as a “counter current flow”.

At each point, heat will transfer from one medium to the other via the metal plate between them. Thanks to the counter current flow and the nature of the plates/channels, PHE heat transfer occurs at a much higher efficiency than in S&T. This allows PHE to be used in tasks where media of very close temperatures exchange heat, i.e. heat recovery tasks. This is of value for example for customers striving to reduce energy costs due to heat loss.

How quickly the substance will flow inside the apparatus, and how efficiently heat is transferred, will depend on the pattern of the plate. Those patterns are imprinted using a hydraulic press. Although it would be possible for a producer to simply press and sell plates for assembly by another party, plates are generally pressed by the same manufacturer that then assembles them into a working apparatus.

Typically these plates consist of stainless steel, either 304 or 316, or titanium. A wide array of non-corrosive alloys might also be used.

The plate system allows for flexibility. The main restriction on capacity, beyond pressure and temperature limitations, will be the carrying bar on which the plates are hung. As long as it has more space, it will normally also be possible to add more plates. Plates can also be taken out with corresponding ease. This in turn allows for ease of serviceability, as plates can be stacked on each other, just next to the actual PHE. Furthermore, this

ease of serviceability means that PHE take up less space compared to capacity than S&T.

Generally, PHE can be used in all the industries where one can find S&T. However, there are very clear exceptions, set mainly by comparably narrow limits regarding temperature and pressure for PHE functionality. Most PHE will reach no more than 30 bars and have a temperature range of -30 °C to +180 °C. More specialised types can reach further however, to pressures approaching 160 bars and have a temperature range of -196 °C to +550 °C.

2.3 S&T

The construction of an S&T is the most simple amongst the industrially manufactured HEX. Into a large, thick shell, is lead a bundle of metal tubes. These tubes are filled with a liquid or gas media. Outside of them, filling up the rest of the shell is another media functioning to heat or cool that inside the tube.

This simplicity is an essential factor behind the S&T success, making it very easy to start production. Essentially, the local blacksmith could produce an S&T of average functionality. Though some might produce their own tubes and shells, it will be quite possible for an in-house producer to buy these from independent suppliers of either and then put them together. This is not to say that there can be no specialisation. In fact, there are niched producers of S&T, for example in industries posing high demands on quality. However, most variations between different S&T will be in size and materials used rather than functions or design.

Unlike PHE, S&T cannot be adapted for true counter current flows, which makes them unsuitable for tasks of heat recovery.

A much wider range of raw materials are available for S&T than what is used in alternative methods, allowing for example carbon steel and other low-cost metals to be used.

Serviceability is comparably difficult in S&T as it is impossible to service them without taking out the tubes from the shell. Due to this, a large area will need to be made accessible in connection to the S&T.

One of the main points of S&T competitiveness is their ability to withstand very high pressures and temperatures. There is no definite limit in either case – it is simply a matter of creating a thicker shell and/or tubes to handle greater extremes. At these points there will be no widely available alternatives.

2.4 AHX

As stated, AHX serve a very different purpose than, and function quite differently from, the other two types mentioned. Nonetheless, they follow the same basic principles as far as they use indirect heat exchange to shift heat, in order either to cool air by using another medium or vice versa. They are constructed from coils of copper foil and aluminium fins. Electric fans move the air through them. The medium with which the heat is exchanged surrounds the coil.

2.5 Summary

There are thus three main types of HEX on the market. As far as market shares go, only S&T and PHE compete with each other, as they have similar customers and perform largely overlapping tasks. AHX have an entirely different customer base. However, all three types follow similar basic principles. In theory, this would mean that those familiar with one type should have a comparative advantage in starting production of another type.

Nevertheless, the question remains unsolved, as of how these market characteristics will affect the actual process of market definition in a strictly EU competition law sense. In order to do this however, we must first have a proper understanding of the law. Consequently, the next few chapters will serve as a description of where the law stands currently.

3 Defining the Market – Legislation

3.1 The Merger Regulation

The ECMR is the primary piece of EU legislation regarding concentrations. Being a Regulation, it is directly enforceable in its entirety on courts of all Member States, and will therefore be directly applicable to all concentrations within the EU.

3.1.1 Objectives

“The objective (and challenge) for merger control is to prevent those mergers that do pose a threat while not impeding those that do not.”⁹

This objective can, perhaps with exceptions, be attributed to all competition enforcement agencies, the EU Commission included. To achieve it, the question one must ask is whether an investigated concentration will cause formerly independent businesses to come under common control, thus impeding the market’s competitive functions.¹⁰

3.1.2 Jurisdiction

A concentration is defined as either

- a) “the merger of two or more previously independent undertakings or parts of undertakings, or
- b) the acquisition, by one or more persons already controlling at least one undertaking, or by any other means, of direct or indirect control of the whole or parts of one or more other undertakings”¹¹

In considering whether a concentration falls within the scope of the ECMR the Commission will look at the effect of this concentration, requiring a positive answer to whether through it, one company will acquire power of control over another.¹²

Which lists three issues potentially of concern in this procedure¹³:

⁹ International Competition Network – “*ICN Report on Merger Guidelines, Chapter 2*”, (April, 2004)

¹⁰ Whish, R – “*Competition Law*” (6th edition, Oxford 2009) p. 799

¹¹ Article 3, ECMR

¹² Whish, R – “*Competition Law*” p. 799

¹³ *Ibid* 799-800

- Horizontal effects – In concentrations between actual or potential competitors in the same product and geographic markets and at the same level of the production and distribution cycle (e.g. a fizzy drinks producer merging with another fizzy drinks producer)
- Vertical effects – In concentrations between two firms at different but complimentary levels of a market for the same product (e.g. a fizzy drinks producer merging with an aluminium can producer)
- Conglomerate effects – In concentrations between two firms who do not compete with, nor complement each other before the concentration, where their power in both markets, combines to allow the concentration to compete in either one market to foreclose competitors (e.g. a fizzy drinks producer merging with a juice producer, allowing the fizzy drinks producer to use the strength of the other, such as bottling capacity or brand name, as a boost to create a dominant position in the fizzy drinks industry)

Of these three, only horizontal concerns have had any greater *practical* impact, adverse vertical effects generally being considered unlikely¹⁴ and findings by the EU Commission of adverse conglomerate effects having been consistently annulled in the EGC¹⁵.

The ECMR applies to concentrations with a “Union dimension”.¹⁶ Whether a concentration has a Union dimension depends on a calculation of the turnover of the companies involved, as well as the geographic allocation of that turnover.¹⁷

If the calculation establishes a Union dimension, it will be the responsibility of its parties to notify the Commission, after the public bid, agreement or acquisition, but before its implementation.¹⁸ The “One-stop rule” holds that the concentration will be considered exclusively by the Commission, except under certain circumstances,¹⁹ where it should be dealt with by national competition authorities. Also, as long as there is a Union dimension, only EU law will be applicable unless very special considerations of legitimate national interests are deemed relevant²⁰.

How the Commission considers a concentration hinges greatly on the market power of that concentration. There are no firm definitions of how big a company can become and any decision on a concentration depends on an

¹⁴ *Ibid* p. 808-810

¹⁵ Case T-5/02 *Tetra Laval v Commission*, upheld on appeal Case C-12/03 P *Commission v Tetra Laval*; Case T-209/01 *Honeywell v Commission*; Case T-210/01 *General Electric v Commission*

¹⁶ Article 1 ECMR – As this Regulation was drafted prior to the Lisbon Treaty, the wording still refers to “Community dimension” rather than Union.

¹⁷ Article 1 and 5 ECMR

¹⁸ Article 4(1) ECMR

¹⁹ Listed in Articles 4 (4) and 9 ECMR as well as the Commission Notice on Case Referral in Respect of Concentrations [2005] OJ C 52/02

²⁰ Article 21 (4) ECMR

estimation of whether it strengthens or creates a dominant market position.²¹ A commonly used formulation has been that a “dominant position”

“relates to a position of economic strength enjoyed by an undertaking which enables it to prevent effective competition being maintained on the relevant market by affording it the power to behave to an appreciable extent independently of its competitors, customers and ultimately of its consumers”.²²

Thus, the main issue in considering the admissibility of a concentration will be the market power created by it. However, there is no point trying to establish market power if one does not first define the market on which that power is to be estimated. The ECMR however, does not reveal how to do this. For guidance in this, one has to look to other sources.

3.2 The Relevant Market Notice

The most important piece of legislation on how to delineate markets is the RMN. This 1997 guidance document codified the collected experiences of the EU Commission since the beginning of regulating concentrations, including the judgements of the EGC and CJEU as well as its own practice.²³ It also took influences from American law, most significantly by importing the SSNIP test from the 1992 Horizontal Merger Guidelines.²⁴ Essentially, its aims were to clarify what tools to use in future cases to define markets, saving companies the trouble of reinventing the wheel as well as creating transparency.²⁵

However, showing how deceptively unstable legal ground is in this area, this massive looking instrument has proven to be quite porous. This can be attributed to mainly three reasons. Firstly, the RMN is non-binding even on EU courts²⁶, theoretically leaving them free to create their own definitions. Secondly, this non-binding nature is enhanced by the EGC’s judgement that there can be no reliance on previous case law even in cases concerning the same industry.²⁷ Though the same tests will be applicable, there will be no room to rely on them to predict the result of a case. Previous cases then, the basis on which the RMN stands, merely state what tests *can* be used, and are thus merely indicative of how future ones *might* be decided. Thirdly, even should enforcers attempt to follow the Notice, there is little indication of any

²¹ ICN Report on Merger Guidelines, Chapter 2, (April, 2004) para 1.14

²² Case 27/76 *United Brands v Commission* para 65

²³ Para 9 RMN

²⁴ Whish, R – “*Competition Law*” p. 26 and 30; DOJ “*Horizontal Merger Guidelines*”, issued in 1992 and revised in 1997, available at www.usdoj.gov/atr/public/guidelines/horiz_book/hmg1.html

²⁵ Speech (01/439) by Commissioner Mario Monti European Commissioner for Competition Policy Market definition as a cornerstone of EU Competition Policy Workshop on Market – Helsinki Fair Centre Helsinki, 5 October 2001 (<http://europa.eu/rapid/pressReleasesAction.do?reference=SPEECH/01/439&format=HTML&aged=0&language=EN&guiLanguage=enDefinition>)

²⁶ Para 6 RMN

²⁷ Cases T-125 & 127/97 *Coca Cola v Commission* para 82

hierarchy applied to the methods suggested by it, leaving it to the relevant institutions to decide on the priority of these tests in each individual case.

Despite this, the RMN remains influential. There has largely been an adherence to it by courts at both EU and national level, and it has been promoted as a general guideline by EU enforcement agencies.²⁸ Furthermore, though previous judgements do not bind courts as to result, they provide good examples of which tests to use depending on the circumstances, knowledge that is likely to be decisive on a case's outcome. The following section will outline the ways in which the market in practice tends to be defined in light of the RMN.

²⁸ Olsson, K – ”Marknadsbegreppets innebörd och utveckling i konkurrensrätten: En studie av hur begreppet relevant marknad redovisas i domstolsprocessen med utgångspunkt i marknadsdomstolens domar” (Juristförlaget i Lund 2009) p 86

4 Defining the Market – In practice

4.1 Substitutability

Defining the market was confirmed early on as an essential element in EU concentration cases. In *Continental Can* the CJEU held market definition as:

“of essential significance for [...] competition can only be judged in relation to those characteristics of the products in question by virtue of which those products are particularly apt to satisfy an inelastic need and are only to a limited extent interchangeable with other products.”²⁹

Thus, there is no point in considering the state of competition on a market if one cannot define where and with what products that competition takes place.

As mentioned in the introduction however, how a “market” is defined in competition law might differ substantially from the meaning given to the same word in other situations. Commercial definitions for example, tend to focus on what companies consider as their potential customer base. Should such definitions be decisive, the market could be potentially boundless including any customer at any time that might consider buying a product, and any producer that at any time might have the ability to produce competing products. On the other side of the spectrum is the enforcer, who, by applying overly narrow definitions could catch more concentrations.

Arguing either extreme would be hard and mostly counterproductive. However, positions in any merger case tend to be polarised and it will be all-important for an involved party to understand the methods used to reach a final position.

The RMN suggests three sources of competitive restraint that might limit the ability of a single company to dictate prices on a market – supply-side substitutability, demand-side substitutability and potential competition.³⁰ To add to the myriad of difficult issues in this area of law, their internal relationship is unclear. As the result of any investigation into a merger can depend heavily on which one of these is given more focus, a separate section will discuss this issue.

Competitive constraints can be applied to all dimensions of a market but to different extents and with different methods. A section will be dedicated to considering those dimensions enumerated in the Notice, i.e. the product³¹

²⁹ Para 32 RMN

³⁰ Para 13 RMN

³¹ Para 7 RMN

and geographical³² markets and the methods used in them. Also the so called temporal perspective will be touched upon, although its importance is much lesser and goes without mention in the RMN.

Ascertaining these competitive constraints can be done by using a wide variety of tests. These range from the strictly qualitative to advanced econometric models. Irrespective of which one might be applied to a particular case, the so called SSNIP test is very likely to influence its application. This test will therefore be discussed separately, before any other. Each of the most commonly used methods for identifying competitive restraints will then be analysed, including their internal relationship as well as that to the SSNIP test where relevant.

It should be remembered, whilst reading the following presentation that markets are not necessarily symmetrical. Although the assumption is normally that a choice to switch in one way will imply a corresponding ability to switch in the opposite direction, vigilance must be maintained against one-way markets, in which one product can pose a competitive restraint on another without the vice versa inference being true.³³

4.1.1 Constraint hierarchy

As mentioned, there are three types of competitive constraint on a company trying to dictate prices in a functioning market. Balancing them off against each other has proven to be one of the controversial issues in market definition. Supply-side perspectives give a much wider market than a focus on demand, and an inclusion of potential competition widens the market even further (potentially indefinitely) into the future. Which constraint is emphasised in an investigation will be of instrumental importance to its outcome.

The tendency has been for the Commission to apply only demand-side substitutability,³⁴ making supply-side substitutability secondary, only considered when “its effects are equivalent to those of demand substitution in terms of effectiveness and immediacy”³⁵ and potential competition not being considered until “at a subsequent stage”³⁶. In these cases, supply-side substitution and potential competition would still be considered, but later on, when considering market power, as is the tendency in most Competition

³² Para 8 RMN

³³ Case *Group 4 Falck/Securicor*, para 16 – The Commission held that, although it was possible for companies established in replenishing ATM services could enter the separate market for cash-in-transit services, switching in the opposite direction was deemed unlikely. This was as the provision of the former services posed substantially greater monetary and other barriers, whilst including many elements of the latter. It would thus be substantially easier switching in one direction than in the other.

³⁴ Säcker, F.J. – “*The Concept of the Relevant Product Market – Between Demand-side Substitutability and Supply-side Substitutability in Competition Law*” (Internationaler Verlag der Wissenschaften, 2008) p 44

³⁵ Para 20 RMN

³⁶ Para 24 RMN

jurisdictions. Theory holds that this would be justified, as typically complex supply-side considerations, including potential competition, would be easier to consider when the market has already been delineated according to demand, at which stage the effect on the end result would supposedly be the same. Thus, in every competition jurisdiction there has been an inclusion, either of an express hierarchy prioritising demand-side substitutability over supply, or of some sort of conditions imposed on the application of the latter.³⁷

However, there has also been criticism voiced against this position. Notably, Säcker, supported by a recent line of German case law, holds that an over-reliance on demand-side issues will in the vast majority of cases cause artificially narrow markets.³⁸

An example of his point is provided by the shoe market. Should demand-side substitutability be the only factor of importance in delineating it, there would be no general market for shoes. Only highly deviant consumers would buy a size 45 shoe should the price of the 39 size shoe that they were originally looking for exceed their shopping budget. Rather, he/she would only look at shoes within a very narrow size range, restricting demand-side substitutability and thus the relevant market to just these sizes.

The impracticality that such an approach poses makes it apparent why supplier aspects should be determinant in many situations. The tendency of demand-side perspectives to create atomised mini-markets is not beneficial to competition. Supply-side perspectives, conversely, would show how prices on different size shoes influence each other through a variety of mechanisms, including chains of substitution (Discussed further down in more detail, ss. 4.1.3.3 and 4.1.4.3), but most importantly the fact that a producer of one size shoes will typically have the “key competence” to quickly switch production to any other size of shoe.³⁹ This constraint on the behaviour of competitors is thus very real.

Reasoning such as this has led German and EU institutions to define wide markets for law books, rather than narrow markets for books on family law⁴⁰, wide markets for long-haul v short-haul air travel rather than narrow ones for travels to specific destinations⁴¹ and markets for pet food instead of dog food⁴². This is despite customers in each case being very likely to possess specific definitions of what they need.

If correct, the result of this type of reasoning would be that the words of the RMN are misleading, as supply-side substitution in these cases would be the

³⁷ ICN Report on Merger Guidelines, Chapter 2, para 1.36-1.40

³⁸ Säcker, F.J. – “*The Concept of the Relevant Product Market*” p 13-7

³⁹ *Ibid* p 42-4 and 55

⁴⁰ *Ibid* p 20 referring to the practice of the German Federal Cartel Office.

⁴¹ Case T-342/99 *Airtours v Commission* [1998] ECR I-1375

⁴² Säcker, F.J. – “*The Concept of the Relevant Product Market*” p 21-2 referring to KG, WuW/E OLG 2404- *Fertigfutter*

only way of widening the market, almost always being at least of equivalent effectiveness and immediacy as demand-side perspectives. Though conditions should rightly apply for their inclusion, these would in most cases be fulfilled. German competition regulating institutions have explicitly taken such a stance. EU institutions have yet to do so.⁴³ However, the abovementioned gives good ground to assume that there is greater opportunity to argue from a supply-side perspective than what the RMN, and the Commission's past tendencies, might lead one to assume. Great care should however be exercised in relying on such assumptions, as they as yet merely represent a hypothesis.

The issue of separating supply-side substitutability from potential competition is comparably, less complex. Essentially, the difference between it and supply-side substitutability seems to be one of closeness in time. Potential competition, being distant, would require more difficult considerations, presupposing knowledge of market conditions and how these affect entry for new competition, leaving it to be excluded in practice. The RMN thus states that

“[w]hen supply-side substitutability would entail the need to adjust significantly existing tangible and intangible assets, additional investments, strategic decisions or time delays, it will not be considered at the stage of market definition.”⁴⁴

Once again, the result of adhering to the strict words of the RMN would be to consider such difficult issues only when determining dominance.⁴⁵

In practice however, it is hard to separate potential competition from its much overlapping supply-side cousin.⁴⁶ Säcker argues, for example, that there is no reason to make any absolute difference between the two concepts. This is as from the point of view of a business, typically strategizing according to current *as well as* future expected development of the market, future constraints will be determinant on market behaviour.⁴⁷ Consequently, although it would be unwise to include very distant future competition in an analysis of supply-side constraints, there is good reason to consider the fairly close ones.

This reasoning leads Säcker to suggest that potential competition should be considered if three conditions are all fulfilled:

⁴³ *Ibid* p 15 and 23 et seq. Säcker points especially in this to the National Federal Court of Justice's BGH, WuW DE-R 1925 *Geographic II* decision of January 16th 2007, stating that “if exclusively the preconceived buying interest of the opposite market side was considered in most cases the relevant market would be extremely small”

⁴⁴ Para 23 RMN

⁴⁵ Para 24 RMN; In Case *Enso/Stora* paras 37-40 for example, the time and costs for companies to switch to another grade of packaging board made it unlikely that any potential competition would be able to come into the market during a period of several years.

⁴⁶ Roth, P. Q.C. and Rose, V. (eds) – “*Bellamy & Child: European EU Law of Competition*” (6th ed. Oxford University Press, 2008) p 271-2

⁴⁷ Säcker, F.J. – “*The Concept of the Relevant Product Market*” p 41

1. Spare plant capacity allows potential competitors to enter the market very quickly following a price increase
2. Benefits of market entry are not offset by increased costs (e.g. redeployment and development costs) and
3. There is no danger of defence strategies, for example established market participants lowering prices, reducing the benefits of market entry.⁴⁸

What this amounts to is essentially, very close to traditional supply-side substitutability, moved slightly forward in time. Potential competition as a separate concept would still be left without consideration in market definition. As long as the term refers to the very close future however, it would be included as an element of supply-side substitutability.

Whether this view will influence competition regulating authorities is far from certain, and perhaps even unlikely. However, given the substantially larger market created, firstly by an increased focus on supply and secondly by an inclusion into supply of very close potential competition, an undertaking would have very much to gain from arguing according to these lines.

4.1.2 The SSNIP test

The best established method for defining a market, in theory, is the SSNIP (Small but Significant Non-transitory Increase in Price) test, described in the RMN under para 15.⁴⁹ Combined with the less publicised “smallest market principle”, i.e. the idea that the effect of a merger should be considered in the smallest possible group of products sold over the smallest possible geographical area⁵⁰ this is the ideal of a market definition test.⁵¹

Essentially the test “assumes that a separate market is something worth monopolising”.⁵² Only if a producer of a particular product in a particular geographic area can profitably sustain prices above competitive price levels, will that area and product be considered as a market separate from others.⁵³

In effect, this means that when using it, one starts with an area and a product with a given price level. A hypothetical monopolist of the focal product and area is assumed.⁵⁴ To the price level a SSNIP imposed by the monopolist is hypothesised. Small but significant is essentially any increase between 5 and

⁴⁸ *Ibid* p 38-9

⁴⁹ ICN Report on Merger Guidelines, Chapter 2 para 1.46 – It is applicable in geographic market definition as well

⁵⁰ *Ibid* para 1.26

⁵¹ *Ibid* (April, 2004) para 1.12

⁵² Roth, P. Q.C. and Rose, V. (eds) – “*Bellamy & Child: European EU Law of Competition*” p 254

⁵³ Office of Fair Trading – “*Market Definition: Understanding Competition Law*” (2004) para 2.7

⁵⁴ *Ibid* 2.9

10 %.⁵⁵ Non-transitory means that it must be lasting, i.e. not allowing the customer to avoid increased cost by waiting for prices to return to normal.⁵⁶

If profitable, the focal products and areas in question constitute the relevant market. If not, the analysis is expanded to include neighbouring areas or the closest substitute products and the same question is asked again. The last level where a SSNIP is profitable signifies the limits of the market.⁵⁷

The RMN sets out the price on which to base the SSNIP as the “prevailing market price”⁵⁸ but one would do well to treat this assumption with caution. In certain situations,⁵⁹ this price is itself already a result of lacking competition. In such cases, it is likely that, rather than switching to interchangeable products, customers switch to entirely different alternatives, or just stop buying the focal product. The problem was succinctly formulated in the U.S. *Kodak* case where it was stated that “[a]t a high enough price, even poor substitutes look good to the consumer”.⁶⁰ Thus, trying to find the competitive price directly would be a more straightforward approach.⁶¹

Even given due care to such considerations, it is important not to overestimate the importance of the SSNIP test. Despite its elevated status, the test is generally impractical. The ideal situation for its application is in an industrial input market, with relatively few and well informed customers. Many markets however look quite different, making the necessary data collection difficult.⁶² Furthermore, the SSNIP test only focuses on price as a competitive factor, yet there are many means of competition beyond price, like service and quality.⁶³ The Commission itself applies it rarely even in merger control⁶⁴ and the RMN itself refers to it only as a “thought

⁵⁵ Though in certain circumstances, smaller increases have been accepted.

⁵⁶ Roth, P. Q.C. and Rose, V. (eds) – “*Bellamy & Child: European EU Law of Competition*” p 254

⁵⁷ Paras 16-17 RMN

⁵⁸ Para 19 RMN

⁵⁹ Whish, R – “*Competition Law*” p. 30 – In a US Supreme Court decision (*United States v E.I. du Pont de Nemours & Co* 351 U.S. 377(1956)), concerning the market in an abuse of dominance case, a close to monopolised market for cellophane wrap was considered by the courts to be competitive. It was perceived as such, as an increase in the prevailing market price caused customers to switch to other products, thus indicating substitutability. However, the base price did not reflect a competitive situation as prices had then already been raised to a point where customers preferred not having the product rather than paying more. Customers switching to aluminium foil and wax paper thus did in fact not view these goods as substitutable, yet switched as they could not afford products from the relevant market. Thus, the example shows how erroneous decisions on market definition can be caused by a false presumption regarding the base price.

⁶⁰ *United States v Eastman Kodak Co*

⁶¹ ICN Report on Merger Guidelines, Chapter 2, para 1.28

⁶² *Ibid*, para 1.23

⁶³ Olsson, K – “*Marknadsbegreppets innebörd och utveckling i konkurrensrätten*” p 94

⁶⁴ In a study from 2004 of a large amount of cases from the period of 1990-2001 (Copenhagen Economics – “*The Internal Market and the Relevant Geographical Market: The impact of the completion of the Single Market Programme on the definition of the*

experiment”,⁶⁵ underlining that there is neither any necessity to overtly use it in each case nor to base it on actual quantitative evidence. Consequently, the EGC has held that price differences cannot be the sole test for finding the relevant market where other factors influence the customer’s choices.⁶⁶

That being said, there is still great value in keeping it in mind, as a “conceptual foundation” from which to start a market assessment.⁶⁷ Thus, even when itself not determinant, it will often point the direction as to how to consider other, mainly qualitative criteria, which on their own would lead to a substantially wider range of interpretations.⁶⁸

4.1.3 The product market

The RMN defines the product market as:

“all those products and/or services [...] regarded as interchangeable or substitutable by the consumer, by reason of the products' characteristics, their prices and their intended use.”⁶⁹

Beyond the SSNIP test, sources of evidence of such interchangeability and substitutability are abundant, and vary greatly. Not all of them are econometric and it is not always necessary to use all of them. In fact, in a great many cases, material for a quantitative analysis is not readily available, in which cases qualitative information will generally suffice.⁷⁰

The following section will outline the sources of evidence most commonly used. The list will not be exhaustive, something that, due to the nature of the subject is impossible. It will however, cover all but the most obscure.

4.1.3.1 Demand-side substitutability

As was discussed above, the theoretical starting point in market definition has been to look at demand-side substitution. If the price of one good should increase, the essential question is whether demand would be able to switch to a different producer of the same or similar product. Such analysis must

relevant geographical market” (Enterprise Papers No 15) p 8,) it was found that the SSNIP test was applied only in 11 % of product markets defined, and 4 % of geographical markets.

⁶⁵ Para 15 RMN

⁶⁶ Case T-25/99 *Roberts v Commission* paras 38-40 – In that case the qualitative aspects of a product.

⁶⁷ Roth, P. Q.C. and Rose, V. (eds) – “*Bellamy & Child: European EU Law of Competition*” p 250-1

⁶⁸ *Airtours v Commission* – Defining the market for package holidays the market for short-haul destinations were considered separate from long-haul ones, despite that a calculation of losses of sales due to a SSNIP had been considered likely to render it unprofitable. Qualitative differences, like objective characteristics, pricing differences and conditions of competition were deemed so dissimilar as to make switching unlikely (The judgement was annulled on other grounds).

⁶⁹ Para 7 RMN

⁷⁰ International Competition Network – “*ICN Investigative Techniques Handbook for Merger Review*” (June 2005) p 54-5

strive to “identify and include in the market only those substitutes whose prices and other characteristics constrain the ability of the merging firms and their rivals from raising prices or reducing output”.⁷¹

Besides the SSNIP, the following tests have been known to be used:

Price elasticity – There are two types of price elasticity:

Own-price elasticity (OPE) measures the effect on demand for a focal product after a change in its price whilst rival products remain constant. This is calculated as the percentage change in the quantity demanded divided by the percentage change in the price. If a price increase from €10 to €10.25 reduces demand from 10000 to 9500 units, the own-price elasticity of demand is -2. In such cases, where the result equals less than -1, there is a relative sensitivity to price increase in demand *indicating* that there are other viable alternatives on the market. The opposite holds where the value is greater than -1.⁷²

As a SSNIP is only relevant if profitable, this evidence is hardly decisive on its own. Lower production volumes and corresponding costs might well make a SSNIP profitable despite loss of market shares. OPE thus needs to be considered in connection to a cost analysis.⁷³

Cross-price elasticity (CPE) asks the opposite question: If an increase/reduction in price is established in the focal product, does demand for a rival product change assuming its prices are held constant? This can be of value, first in indicating whether there are any viable alternatives to a particular product and, if not, for finding the closest competitive product. This test is however of less importance than own-price elasticity which has a more direct effect on the results of the SSNIP test.⁷⁴

Critical loss analysis – The critical loss is the smallest amount of sales a producer might lose from raising prices, which would render the price increase unprofitable.⁷⁵ This is an essential element of the SSNIP test. In general, there is a negative correlation between critical loss and marginal sales.⁷⁶ The higher the profitability of the latter, the greater the loss when those customers switch products.⁷⁷

Werden points out three cases where critical loss analysis might be misleading: i) if elasticity of demand differs between different types of users

⁷¹ ICN Report on Merger Guidelines, Chapter 2, para 1.17

⁷² Roth, P. Q.C. and Rose, V. (eds) – “*Bellamy & Child: European EU Law of Competition*” p 265

⁷³ *Ibid* p 265

⁷⁴ *Ibid* p 265-6

⁷⁵ *Ibid* p 266

⁷⁶ The customers most likely to switch as a result of a SSNIP.

⁷⁷ Harris, B. and Veljanovski, C. – “*Critical Loss Analysis: Its growing use in Competition Law*” (2003 ECLR 214)

(discussed in more detail under price discrimination) and/or uses, ii) if costs of production vary between different plants and iii) if costs can be offset by shutting down production capacity.⁷⁸

Switching data – Past evidence of consumer behaviour should normally be influential in determining the extent of a market. However, such evidence is considered only under the assumption that the market has not changed in any decisive way since the switch occurred and that *previous* demand behaviour in that particular case, is deemed likely to indicate the direction also of *future* behaviour. Of course, the cellophane fallacy must be kept in mind, so that one makes sure that such switching is due to a genuine conception of substitutability.⁷⁹

Also, it will matter whether the product is part of a one-way market. Should the market be of this kind, past switching in one direction will not be indicative of future switching in other directions.⁸⁰

Stability of demand – If demand for a product remains stable over time, this will be highly indicative of a product constituting a separate product market. Such findings are strengthened by evidence of other products attempting but failing to take market shares from the focal product.⁸¹

Switching costs and other barriers – If customers switching products incur any additional costs from replacing machinery, adjusting moulds or dies or re-training staff, etc, this will speak against those products being interchangeable. The higher the switching costs, the greater is the presumption against two products being in the same market. Naturally, as SSNIPs signify 5-10% increases, switching costs exceeding this make the case for those claiming substitutability quite difficult.⁸²

Order and bidding data – Has a particular type of customer shown preference for a particular version of a product? This will indicate that a separate market exists for this version.⁸³

Shock analysis or event evidence – Where relative prices of two products change due to sudden occurrences affecting one more than the other, the resulting change in their respective sales is likely to indicate the extent of

⁷⁸Werden, G. – “*Beyond Critical Loss: Tailoring Applications of the Hypothetical Monopolist Paradigm*” (2002) <http://papers.ssrn.com> page 3

⁷⁹Roth, P. Q.C. and Rose, V. (eds) – “*Bellamy & Child: European EU Law of Competition*” p 260-261

⁸⁰*Ibid*

⁸¹This was the case in Case C-333/94P *Tetra Pak v Commission* para 15 where other packaging material than carton proved unable to affect carton market shares more than marginally during a 15-year period.

⁸²Roth, P. Q.C. and Rose, V. (eds) – “*Bellamy & Child: European EU Law of Competition*” p 262

⁸³Case *Bertelsmann/Springer/JV* para 44 – Customers of large orders of print showed an inclination for a different type of printing than those of smaller orders, indicating this as a separate market.

their substitutability.⁸⁴ A typical example would be if a sudden increase in aluminium prices forced up the price of canned fizzy drink, leaving bottled fizzy drinks relatively stable. If the latter takes market shares of the former, they are likely to be substitutable.

Similarly, changes in sales of a particular product by the introduction of another new product, might be indicative of market extent.⁸⁵ Thus, if a new brand of *bottled* drink is introduced, and market shares of *canned* drinks were subsequently reduced, this would thus be indicative of the two products being in the same market or vice versa.⁸⁶

Different absolute price levels – Different prices on two products would be indicative of consumers considering them not to be interchangeable, valuing the more expensive ones higher for their purposes (no vice versa inference can be drawn however). Clearly separated price strata, will thus reduce the likelihood for customers to switch from a lower quality product to a higher quality one, as long as the former can satisfy their needs.⁸⁷

Some clear exceptions to this rule can be identified however. Firstly, even where price levels are different due to perceived differences in quality, it will not be decisive on market definition if customers will switch anyway. Secondly, price differences might correspond to differences in content, as is the case if a kitchen roll of 80 sheets is twice as expensive as one with 40 sheets. Thirdly, chains of substitution, discussed later, might make two differently priced products part of the same market. In each case one has to consider these and a range of other issues before making a decision.⁸⁸

Price correlations – Two products following each other closely pricewise are likely to be in the same market, as they would seem to exert influence on one another. However, this requires good data and vigilance against false correlations. A wide range of other factors might cause such correlation, including common inflationary trends, common exchange rates or changes in prices of common components or inputs.⁸⁹

Product characteristics and functional interchangeability – It is essential, that products share characteristics and have functional

⁸⁴ Roth, P. Q.C. and Rose, V. (eds) – “*Bellamy & Child: European EU Law of Competition*” p 262

⁸⁵ *Ibid*, p 262-3

⁸⁶ Case *Procter & Gamble/Schickendanz* paras 62-71 – Prior introduction to the market of a new brand of sanitary towels did not coincide with a significant reduction in the market share of tampons, but only in other brands of sanitary towels, thus indicating that sanitary towels constituted a separate market from tampons.

⁸⁷ Case *Microsoft* paras 369-382 – Higher-level operating systems were considered part of a separate market from lower-level ones as there were clear bands of prices, where the more expensive ones could carry out functions that were unnecessary for users of the lower priced systems.

⁸⁸ Roth, P. Q.C. and Rose, V. (eds) – “*Bellamy & Child: European EU Law of Competition*” p 263-4

⁸⁹ *Ibid*, p 266-7

interchangeability for them to be considered part of the same market.⁹⁰ Three caveats should be observed however. First, practical substitutability indicated by similar characteristics and intended use might well be offset by customers' switching costs and brand loyalty. Second, the mere element of similar physical characteristics does not necessitate customers viewing them as interchangeable.⁹¹ Third, physically very different products, matches and lighters a typical example, may be close substitutes if customers use them for similar purposes.⁹²

Consumer preferences and perceptions – Although characteristics might *objectively* be very close between two products, customers might perceive them to be very different, thus counteracting substitution. Where this has been established however, corroborative evidence, e.g. looking at surveys and absolute price levels has also been deemed necessary.⁹³

Price discrimination – If certain customers lack genuine alternatives, prices might profitably be increased for them specifically, leaving other prices static. Successful discrimination⁹⁴ would then counteract the critical loss test, as those particular customers, unable to switch to other products, would still be forced to purchase an overpriced product. Such scenarios are strong indications to single out sales to these customers as markets of their own.⁹⁵

⁹⁰ Case *Sony/BMG* – Product characteristics were emphasised by the Commission to separate the market for online music from other recorded music; Case 85/76 *Hoffman-LaRoche v Commission* [1979] ECR 461, para 28 – Effective competition was held to presuppose a sufficient degree of interchangeability between all products on the relevant market regarding the specific use of such products

⁹¹ Case *Nestlé/Perrier* para 9 – Water, tea and milk, though they were considered to have thirst-quenching characteristics and were used in that purpose, were deemed a separate markets as consumers did not perceive them to be interchangeable; Case T-395/94 *Atlantic Container v Commission* [2002] ECR II-875 paras 269-290 – Containerised liner shipping was deemed a separate market from other forms of trans-Atlantic trade, most notably air-transport and conventional bulk-break liner transport as these alleged substitutes were only practical alternatives for very few, specific, types of goods.

⁹² Office of Fair Trading – “*Market Definition: Understanding Competition Law*” para 3.5 and 3.7

⁹³ *Nestlé/Perrier* para 10 – This issue proved decisive as perceptions of mineral water as a “natural product” and “its association with purity, cleanliness, absence of contamination and, in general, health and a healthy style of life”, in surveys proved more dominant in the minds of consumers than the actual characteristics or functions of the beverage in question; Case *Airtours*, para 20 – One reason for the Commission considering long-haul package holidays and short-haul ones as separate markets was the “exotic image” of long-haul destinations, showing their image as more suitable for couples whereas the other type were better for families with children, evidenced by the substantial price differences between the two types.

⁹⁴ If the company in question cannot properly identify customers for discrimination, price discrimination would most likely be inefficient as the discriminated companies would be able to switch to alternatives following a SSNIP. To identify a discriminated market, the critical loss test would therefore still be relevant. See Harris, B. and Veljanovski, C. – “*Critical Loss Analysis: Its growing use in Competition Law*” 216-7.

⁹⁵ Roth, P. Q.C. and Rose, V. (eds) – “*Bellamy & Child: European EU Law of Competition*” p 267-8

Some typical situations⁹⁶ where discrimination is possible are caused by:

- high switching costs keeping customers locked in to purchasing a particular product, e.g. changing production processes, re-educating workers etc.
- demand differing with time, e.g. demand for transport services at peak times compared to off peak demand (this might also be considered in defining the temporal market, see s. 5.1.5).
- the purpose for which the focal product is used e.g. production of different end products possibly creating varying dependency for the same focal product.

Should non-discriminated customers be able and likely to buy products and sell on to discriminated customers, this would counteract, and consequently speak against, discrimination.⁹⁷

Trade relationships – Where otherwise identical or similar products are sold to different customers or through different channels of distribution, they are likely to form parts of different markets despite any other similarities.⁹⁸ Another related point (considered in greater depth in section 4.1.3.3), is that the Commission often considers parts to original equipment to be part of a different market from that of independent aftermarkets.⁹⁹

Views of customers and competitors – The Commission regularly incorporates surveys of customer views in response to hypothetical SSNIPs in their research on cases.¹⁰⁰ Together with complimentary evidence they might hold some weight, but isolated they are of little value and generally they are treated with considerable caution. This is mainly due to their hypothetical nature as well as to the likely temptation of skewing answers to fit a particular agenda of the competitor or customer.¹⁰¹

Internal company documents – Of course, claims by undertakings of a very wide market will not normally be taken at face value. However, should internal documents analysing the market, or market surveys, indicate a genuinely held belief in a particular definition, this might hold some sway on the Commission's conclusions.¹⁰² The weight of such documentation

⁹⁶ Office of Fair Trading – “*Market Definition: Understanding Competition Law*” para 3.8

⁹⁷ *Ibid*, para 3.8

⁹⁸ Case *SCA/Metsä Tissue* para 17 – The Commission held that tissues used for domestic use were different from those used away from home as they were sold through different channels to different customers. The Commission based its argument on its previous ruling in Case *Kimberly Clark/Scott* paras 29-33 to the same effect, with very similar facts.

⁹⁹ Roth, P. Q.C. and Rose, V. (eds) – “*Bellamy & Child: European EU Law of Competition*” p 268

¹⁰⁰ Para 40 RMN

¹⁰¹ Roth, P. Q.C. and Rose, V. (eds) – “*Bellamy & Child: European EU Law of Competition*” p 269

¹⁰² This was the case for example in Case *De Post-La Poste* para 41-2 where agreements with other companies indicating a view of the potential customers for general letter mail as

nonetheless varies and, especially with customer surveys in connection to mergers, the Commission will show considerable hesitation in relying on them for fear of distortion of the results on behalf of the investigated companies. This will be the case even when surveys are carried out by third parties on behalf of those involved in the concentration. In either case, the sources referred to would have to date from before the start of the investigation in order to be considered.¹⁰³

4.1.3.2 Supply-side substitutability

Switching costs – Normally includes changes to manufacturing equipment, training of staff, marketing costs and any distribution costs.¹⁰⁴

Other barriers to switching – Statutory or similar restrictions,¹⁰⁵ as well as technological barriers¹⁰⁶ are typical examples of other barriers that might keep new suppliers from entering the market.

Shock analysis or event evidence – Suppliers' past behaviour is of particular importance for ascertaining supply-side substitutability. If in the past, a producer of a product similar to one produced by a competitor, rather than switching production in response to market shortages of the latter lets it remain unchanged, this is a strong indication of those products being part of separate markets.¹⁰⁷

Shares of supply – Where market shares of producers in two products are markedly different, it is unlikely for them to be part of the same market.¹⁰⁸

different from those of business-to-business mail, was taken into consideration to indicate these mail-types as separate markets.

¹⁰³ Roth, P. Q.C. and Rose, V. (eds) – “*Bellamy & Child: European EU Law of Competition*” p 269-70

¹⁰⁴ *Ibid* para 90 – Pack sizes for industrial compared to retail use were largely distinct as were customers and distribution channels, both characteristics taken to indicate very different structures on both markets, thus, presumably causing extra expenses to suppliers entering one from the other; *Microsoft* paras 334-341 – The high importance attributed by customers to familiarity with PC operating systems lead to such substantial marketing costs for any new market entrant in PC media players that the Commission considered these costs as a barrier to supply-side substitution in this product market.

¹⁰⁵ Case T-229/94 *Deutsche Bahn v Commission* – The provision of rail services was considered separate from railway transport services, partially based on the fact that the undertakings involved held monopolies, established by statute, in the provision of these services within the relevant countries.

¹⁰⁶ *Microsoft* paras 418-422 – As IP-rights were key to supplying streaming media players and as these were controlled by existing suppliers, the Commission held that new suppliers would in effect be barred from entering the market.

¹⁰⁷ Roth, P. Q.C. and Rose, V. (eds) – “*Bellamy & Child: European EU Law of Competition*” p 273

¹⁰⁸ *Ibid*, p 268 – They place this test within demand-side constraints, but base this on Case *GE/Instrumentarium*, para 29, where this constraint was considered under supply, which in fact, would seem more logical.

4.1.3.3 Particular issues in determining the RPM

Connected markets

Selling a particular product might create a connected “**downstream market**”, e.g. a market for printers connected to a market for printer cartridges, or a market for repair services after the sale of computers. Assuming downstream products of a certain type are not interchangeable with others, this will most likely lead to that connected market to be considered separate. Thus, if a printer can only take one type of cartridge, it will be likely that this cartridge make will be a separate market. A producer of an upstream product that requires a downstream product that it produces itself will risk being considered dominant in the downstream market.¹⁰⁹ This holds true also regarding the sale of licences¹¹⁰ or access to facilities.¹¹¹

In contrast to downstream markets stand “**system markets**”. In these, customers are assumed to calculate the total cost of a system of products, including downstream products, before committing to a purchase of the upstream product.¹¹² When performing this analysis, one must also consider the relative prices of primary and secondary products. High relative prices for downstream products increase the likelihood of them affecting the decision to purchase an upstream counterpart. Also, one must look at whether there are any producers solely supplying the downstream product, which in that case would indicate there being a separate market.¹¹³ Finally, it is of relevance should the same companies tend to purchase at both levels. If not, it is less likely that the downstream product is considered at the purchase of the upstream one.¹¹⁴

¹⁰⁹ Case 22/78 *Hugin v Commission* paras 5-8 – The relevant market was considered only as spare parts to *Hugin* cash registers as those registers were incompatible with other makes, thus rendering independent repair services totally dependent on *Hugin* in order to provide services to their machines; Case T-30/89 *Hilti v Commission* para 18 – As nail-guns and consumables were generally not purchased together, thus being subject to different forces of demand, and as such consumables were specifically manufactured for use in a single brand of gun, nail-guns, the EGC identified separate markets a) for nail-guns, b) cartridge-strips for those guns and c) nails for those cartridges

¹¹⁰ Case 26/75 *General Motors v Commission* paras 7-11 – The sale by a car manufacturer of certificates of conformity for those cars with Belgian law was deemed a separate market from the actual sale of cars.

¹¹¹ Case C-82/01P *Aéroports de Paris v Commission* paras 84-96 – The CJEU held that as an airport manager selling service licenses, *Aéroports de Paris* was in a market separate from its activities in ground-handling services for air services.

¹¹² DG Comp – *XXVth Report on Competition Policy* (1995) (para 87) – In *Pelikan/Kyocera* purchasers of printers were by the Commission deemed likely to consider cartridge prices during the lifespan of a printer when making purchasing decisions.

¹¹³ Case T-86/95 *Compagnie Generale Maritime v Commission* paras 128-9

¹¹⁴ *Hugin* paras 6-8

Finally, separate markets might be relevant for **different stages** of the production and distribution chain. Raw materials have thus been considered separate from finished products¹¹⁵ as have retail sales from wholesale¹¹⁶.

Branded v own label goods – The more emphasis by customers on brand names, the more likely that high profile brands constitute separate markets from own label goods.¹¹⁷

In-house production – Could in-house producers start producing for the market following a SSNIP by another producer? If so, they ought be included when calculating the market.¹¹⁸

Chains of substitution – Laptops in the price range of €500-€1000 might very well be in the same market though the lowest priced ones can hardly be substituted by the highest. This conclusion is based on the concept of continuous chains of substitution, where SSNIPs in €500 laptops will not directly affect the demand for €1000 laptops but will affect them via a “ripple effect”, causing demand for computers in the closer price range to increase, and thus shifting demand upwards. Such overlapping chains can be considered a single RPM if a SSNIP would be rendered unprofitable by such behaviour.

For the Commission to consider chains like these, the RMN requires “corroborating evidence”, i.e. evidence of price interdependence at the extremes of such chains.¹¹⁹ Nonetheless, what this might be has so far been unclear even when such chains have been successfully argued. This however, has not hindered them from being established on quite a few occasions in the past – with different quality spirits,¹²⁰ premium and economy cruises,¹²¹ different quality pet foods¹²² and hospital ventilation equipment¹²³ amongst others.

Procurement markets – In these markets the SSNIP test is modified slightly, referring to a hypothetical monopsonist (a sole purchaser of the relevant product) rather than a monopolist attempting to permanently

¹¹⁵ Cases 6 & 7/73 *Commercial Solvents v Commission* para 22

¹¹⁶ Case T-139/98 *AAMS v Commission*

¹¹⁷ Roth, P. Q.C. and Rose, V. (eds) – “*Bellamy & Child: European EU Law of Competition*” p 278

¹¹⁸ Case T-310/01 *Schneider Electric v Commission* [2002] paras 281-3 – In-house production had not been included in the Commission’s Decision, thus overstating the market share of non-vertically integrated suppliers. The Decision was consequently overturned by the EGC.

¹¹⁹ Roth, P. Q.C. and Rose, V. (eds) – “*Bellamy & Child: European EU Law of Competition*” p 279

¹²⁰ Case *Pernod Ricard/Diageo/Seagram Spirits* para 16

¹²¹ Case *Carnival Corporation/P&O Princess* paras 78 and 91 – A detailed analysis of the market showed that though the market could be divided roughly according to the premium/economy distinction, individual cruise organisers were free to put together packages that bridged the gap between these extremes, i.e. chains of substitution.

¹²² Case *Masterfoods/Royal Canin* paras 15-17

¹²³ Case *MSiemens Drägerwerk/JV* 16-19

decrease prices by 5-10 % on products being purchased. If the monopsonist has the power to do so profitably, it is likely that this purchasing base will be considered a separate market.¹²⁴

Technology markets – Where licensing of technology takes place, this might give cause for identifying a separate product market for such licensing. This is particularly the case in industries where licenses are sold separately from the underlying products.¹²⁵

Innovation markets – Relevant in high technology industries, where particular producers will take steps to prepare innovative future products. If two major innovators merge, this might impede future advances.¹²⁶ Normally however, not being immediate in any respect, this type of competitive restraint will be dealt with under potential competition rather than under supply-side substitution.¹²⁷

4.1.4 The geographic market

The RMN defines the geographic market as:

“[t]he area in which the undertakings concerned are involved in the supply and demand of products or services, in which the conditions of competition are sufficiently homogeneous and which can be distinguished from neighbouring areas because the conditions of competition are appreciably different in those area.”¹²⁸

Applying the SSNIP test in the geographic dimension would thus mean that one would need to find the smallest market where a SSNIP could be profitably sustained by a hypothetical monopolist.

The SSNIP test is often easier to apply to geographic markets than to product markets due to more readily available data. Despite this availability however, it seems that it is applied very rarely, less often at least than in product markets¹²⁹. Instead, much simpler methods are preferred, like looking at transport costs, regulatory barriers and price differences.¹³⁰

¹²⁴ In Case T-219/99 *British Airways v Commission* paras 101 and 107 the EGC held that travel agents supplying certain services (advertising and commercial promotional services) to this airline were so dependant on sales to BA that a separate procurement market could be said to exist

¹²⁵ Roth, P. Q.C. and Rose, V. (eds) – “*Bellamy & Child: European EU Law of Competition*” p 281; Case *Shell/Montecatini* – It was held that the market for polypropylene technology was separate for that for polypropylene.

¹²⁶ *Ibid* p 281-2

¹²⁷ Whish, R – “*Competition Law*” (6th edition, Oxford 2009) p. 37

¹²⁸ Para 8 RMN

¹²⁹ Copenhagen Economics – “*The Internal Market and the Relevant Geographic Market*” p 12 – Only in 4 % of cases, according a study of all cases between 1990 and 2001

¹³⁰ *Ibid*

4.1.4.1 Demand-side substitutability

Transport costs and delivery time – This is one of the most important aspects in defining the RGM.¹³¹ High costs relative to product prices typically lead to less likelihood of customers looking for products further from home.¹³² Long delivery periods typically produce the same effect.¹³³

Pricing data – Connected to the concept of transport costs, a higher product value increases the likelihood of travelling further to attain bargains. Aside from this, materially different prices in different areas suggest them being part of different markets as had they not been so, prices would most likely even out.¹³⁴ This however is not conclusive evidence as transport costs might well weigh up the difference.¹³⁵

Furthermore, it will matter for the assessment whether differences perceived stem from causes inherent in the market structure or if they are temporary of nature. If the former holds true¹³⁶ this will justify a narrower market and vice versa¹³⁷. Though borderlines are vague, the result of such an inquiry could be decisive on market definition.

Also, persistent price correlations will be influential, just as is the case with defining the RPM.

National preferences – Linguistic requirements, cultural features, consumer-led standards, requirements specific to a local area, or local/national preferences more generally.¹³⁸ Some of these will be obvious when present. In other cases, they can be evidenced, for example by the

¹³¹ *Ibid*

¹³² Roth, P. Q.C. and Rose, V. (eds) – “*Bellamy & Child: European EU Law of Competition*” p 284; Case *Irish Sugar* para 95 – The Commission rejected a claim that the relevant market for granulated sugar was wider than Ireland as, despite large surpluses in other European countries, freight costs posed significant trade barriers.

¹³³ Copenhagen Economics – “*The Internal Market and the Relevant Geographic Market*” p 12

¹³⁴ Case *Michelin II* paras 134-139 – Persistent differences in tyre prices between Member States over time indicated that the relevant geographic market was national.

¹³⁵ Roth, P. Q.C. and Rose, V. (eds) – “*Bellamy & Child: European EU Law of Competition*”, p 285; Case *Procter & Gamble/Wella* para 27 – This point was indirectly evidenced in this case by the Commission’s statement that “[p]ersistent price differences that are *not due to transport costs* are a strong indicator that [...] products in one Member State do not exercise a competitive constraint on [...] products in other Member States” (emphasis added).

¹³⁶ Roth, P. Q.C. and Rose, V. (eds) – “*Bellamy & Child: European EU Law of Competition*” (6th ed. Oxford University Press, 2008) p 284

¹³⁷ Which was the case in *Hilti v Commission para 81* where the EGC held that high price disparities between Member States, though unexpected due to low transport costs, were not enough to justify a narrowing of the market as differences were caused by artificial barriers erected by market participants, not the structure of competition.

¹³⁸ Case *Schneider Electric/Legrand* paras 193-242 (Annulled on other grounds in *Schneider Electric v Commission* (n. 114 above))

nature of the product¹³⁹, sales requirements¹⁴⁰ or other factors like regulatory barriers or safety restrictions.¹⁴¹

Geographic purchasing patterns and trade flows – Frequencies of inter-regional sales will be strongly indicative, but not decisive in themselves, of a market's extent¹⁴². This does require considering the sources of such patterns, as well as of the potential impact of a SSNIP¹⁴³ and in each case, it must be ascertained what might be the barriers to trade¹⁴⁴.

Shock analysis or event evidence – The behaviour of consumers following a shock will be indicative of market extent. If prices remain stable in one area, whilst increasing or decreasing in another, this will likely indicate them constituting separate geographic markets.¹⁴⁵ Likewise, if a shortage/excess¹⁴⁶ or the establishment of a new brand, in one area does not cause a surge of products to or from another, this will also be a good ground for treating those areas as separate markets.

Market structure – Areas with different market structures are likely to be separate markets. Especially significant for proving such differences will be the organisation of different companies, i.e. whether their structure mirrors a belief in market structures varying in different countries.¹⁴⁷

Views of customers and competitors – The same applies regarding this in the RGM as in the RPM. Due to the opportunity for customers and competitors to purposely damage the investigated company combined with

¹³⁹ Case T-346 & 347/02 *Cableuropa v Commission* – The Spanish market was considered separate from others concerning the three separate products of the sale of broadcasting rights for films, for football matches involving Spanish teams and for other sporting rights and entertainments. This was due to linguistic barriers, national factors and the fact that broadcasting rights tended to be sold with national exclusivity.

¹⁴⁰ In *Siemens/Drägerwerk/JV* sale of therapy equipment required a local presence by the supplier for distribution and services, thus narrowing markets significantly.

¹⁴¹ Roth, P. Q.C. and Rose, V. (eds) – “*Bellamy & Child: European EU Law of Competition*” p 286; A wide array of such concerns were evidenced in *United Brands v Commission* paras 36-57, including market structure, customs procedures and national preferences.

¹⁴² Para 48 RMN; This was the case in *Blackstone/Acetex* paras 32, 33, 54, 55 where supplies moved easily over the borders of the focal area depending on demand, thus indicating a wider market.

¹⁴³ Para 49 RMN

¹⁴⁴ Para 50 RMN

¹⁴⁵ *Irish Sugar* para 96 – As prices in Ireland remained stable, even as a price war caused a substantial lowering of prices in the UK market this was indicative of the markets for Ireland and Northern Ireland as being separate.

¹⁴⁶ Case *Blackstone/Acetex* para 41.

¹⁴⁷ Case *Michelin v Commission* paras 23-27 and Case *Michelin II* paras 125-126 – That tyre dealers had organised subdivisions according to national borders was held to reflect the custom of tyre dealers only to purchase from suppliers located in their base country.; *Procter & Gamble/Wella* paras 24 and 26 – Due to the uniform behaviour by producers of hair products, to produce and market products within each Member State separately, as well as the tendency for customers and retailers only to look within those borders for products, the geographic market was defined nationally.

the hypothetical nature of the questions causes, customer and competitor surveys are normally of little value.¹⁴⁸

Internal company documents – What was said in respect to this regarding the RPM applies equally to the RGM. Documents of this type might indeed be of value, but there will be a strong presumption against their objective value, even when carried out by third parties. For them to be of any relevance to the outcome of the case it will normally be necessary for them to be supported by corroborative evidence. Also, they must originate from before the start of the investigation.¹⁴⁹

4.1.4.2 Supply-side substitutability

Trade flows and pricing data – Based on these types of evidence, identifying distances over which providers currently supply and then comparing those distances with any relevant price differences between locations, conclusions might be drawn about the necessary preconditions for causing a supplier to be likely to start supplying a particular location. These conclusions are often decisive in supply-side considerations of the RGM. Account needs to be taken however, of exchange rate movements and variations in taxation¹⁵⁰

Shares of supply – Actual, different proportions in shares of supply held by producers in different areas will indicate those areas being separate markets.¹⁵¹ Also, the upholding of a high and stable market share in a particular area during a longer period will be indicative of lacking external competition, i.e. of it being a separate market.¹⁵² In either case, the Commission has emphasised a need to look at the historic reasons of such shares, although it has left unclear what effect such consideration will have.¹⁵³

Other barriers to switching – During the 1990-2001 period these were found to be the most influential for defining the RGM.¹⁵⁴ Most importantly this includes legislative barriers. A look generally at barriers to suppliers' entrance will be necessary. Such barriers have been known to include

¹⁴⁸ Para 48 RMN

¹⁴⁹ Roth, P. Q.C. and Rose, V. (eds) – “*Bellamy & Child: European EU Law of Competition*” p 289

¹⁵⁰ Roth, P. Q.C. and Rose, V. (eds) – “*Bellamy & Child: European EU Law of Competition*” p 291

¹⁵¹ Para 28 RMN; Case *Areva/Urenco/ETC JV* paras 80-83 ; *Verbund/Energie Allianz* para 58 ; *GE/Instrumentarium* para 80; *Procter & Gamble/Wella* para 25; and Case *Continental Phoenix* paras 41-42 and 110-112 – Amongst other things, massive Chinese overcapacity showed no impact on the European market

¹⁵² *Areva/Urenco/ETC JV* paras 76-79

¹⁵³ *Ibid* paras 76 and 83

¹⁵⁴ Copenhagen Economics – “*The Internal Market and the Relevant Geographic Market*” p 12

labelling requirements¹⁵⁵, packaging disposal rules, and rules requiring tickets to be bought in a particular country¹⁵⁶.

4.1.4.3 Particular issues in determining the RGM

Chains of substitution – These function quite similarly in defining RGMs markets as in RPMs, i.e. according to the principle of extremes influencing each other via overlapping effects. If a petrol station thus changes its prices, this is in itself unlikely to affect the prices offered by the petrol station 100 miles down the road. They would not then be substitutable. However, should there be a chain of petrol stations along the road, each might be substitutable with a range of other stations on either side of it. If there is enough such overlap, a price change in a station at one end will affect the prices at the opposite side. There would then be a chain of geographic substitutability.

Materially different prices at the extremes of a spectrum will speak against such chains existing and in either case, there will have to be corroborative evidence supporting the existence of these chains.¹⁵⁷ Also, where suppliers are able to price discriminate between different customers this speaks against a chain of substitution.¹⁵⁸

4.1.5 The temporal market

To these two types of market one may add the “temporal market”, where the substitutability of products depends on the time. It has been considered in certain cases.¹⁵⁹ However, express consideration of this market dimension in practice is limited. It is not listed in the RMN. Where considered, it is often done within an analysis of the product market rather than independently. Such would be natural, for example, when considering peak-time rail-travel compared to off-peak travel, the temporal aspect being essential in defining the difference between those products. As so often in market definition, one needs to look at each case individually to ascertain the sensibility in including it, some cases being obvious, others being less so.¹⁶⁰

¹⁵⁵ *AAMS v Commission* para 42

¹⁵⁶ *British Airways v Commission* paras 110-11

¹⁵⁷ Para 58 RMN

¹⁵⁸ *Case Owens-Illinois/BSN Glasspack* para 25– That suppliers could price discriminate between individual customers as contracts were negotiated bilaterally whilst prices depended significantly on individual product specifications, indicated that different areas, reached by different factories producing glass packaging, though partially overlapping, were separate markets. ; *Group 4 Falck/Securicor* para 34.

¹⁵⁹ Notably in *United Brands v Commission* paras 12-35 – Bananas were deemed a separate market from other fruit as they were available throughout the year

¹⁶⁰ Roth, P. Q.C. and Rose, V. (eds) – “*Bellamy & Child: European EU Law of Competition*” p 293

4.1.5.1 Demand-side substitutability

Mainly in defining the temporal market one looks at the ability to discriminate particular customers, depending on their ability to delay their purchase. An ability to do so would effectively counteract the SSNIP leading to a need to expand the market. In cases like the one concerning peak v off-peak rail-travel, the relevant difference between considering product and temporal substitutability will lie in whether consumers can *delay consumption* rather than *switch demand* to alternative rail routes. Only in the former case will one be able to discuss the temporal market.¹⁶¹

4.1.5.2 Supply-side substitutability

Here, the decisive issue is the ability of suppliers of products from outside the focal period, could counteract a SSNIP imposed by a hypothetical monopolist by starting supply before that period has run out.¹⁶² Should for example, a SSNIP be imposed on bananas during a particular period, there is no reason, from a temporal perspective to assign them to a separate market if an independent producer of oranges could start supply before the end of that period.

¹⁶¹ *Ibid* p 293-4

¹⁶² *Ibid* p 294

5 Defining the Market – Summary

The above presentation on the law on defining the market in EU concentration cases has highlighted several issues of importance. This section will briefly summarise them before moving on in the next chapter to provide an example of their application.

Legislation consists of mainly two instruments. The ECMR defines what is a concentration of Union dimension and how to its legality within a relevant market is determined. It does not indicate how to define such markets. The main instrument for this is the RMN, a summary of the Commission's experience in doing so up until 1997. It is persuasive but non-binding, non-exhaustive and, despite enumerating a large amount of tests for market definition, does not create a hierarchy between them. The CJEU has later also declined to establish such.

Thus, a number of conundrums must be solved in each case. First, the amount of dimensions to consider varies. Most times only the product and geographical market will get a separate consideration whilst the temporal, if mentioned is included in the RPM. However, sometimes it will get separate consideration.

Causing more difficulty, is the less than properly charted issue of what weight if any, to give supply-side constraints and potential competition compared to demand-side constraints. The traditional stance is that the latter ought be decisive. Supply-side considerations have taken a quite distant second place, ideally considered when determining dominance, whilst potential competition is seen as much too speculative to be of practical use.

However, the RMN has not entirely rejected either one and looking at the practice of the CJEU and EGC it is clear that cases have often been decided on supply-side factors. As regards potential competition there indeed seems to be a line drawn, but a blurry one. It is extremely hard separating supply-side considerations from ideas about the development of a perceived market in the near future. Potential competition is thus likely partially included in supply. Thus, there is still much scope for argumentation on these issues.

Even after passing the hurdle of deciding which constraint to look at primarily, the involved parties must in each dimension look at a multitude of tests for both constraints. The lack of hierarchy between them makes it uncertain which test will come to be decisive. Although a vast amount of cases have been decided, trends are ambiguous. The SSNIP test was introduced as an overarching test to be preferred over others. However, its many drawbacks have limited its use vastly. Instead, the SSNIP, and other

econometric tests have been added to the large collection of tests that might be used depending on circumstances.

Based on the above, those considering a concentration will have to first take a stance on very many, very difficult issues. The following section will show an example of how this might be done.

6 Application to the PHE market segment

It should be made clear that before considering what is said below on market definition, one should also consider whether the concentration in question might actually give rise to concern by the Commission. As stated above, in the section on the ECMR (s. 3.1), only concentrations of a certain extent will be relevant. Even where it reaches such proportions, experience has shown that mainly horizontal concentrations, and sometimes vertical ones, are normally considered problematic whereas conglomerate ones are hardly ever.

That being said, the following presentation will follow the assumption that the ECMR indeed applies. In that case, it is generally in the interest of a company considering a merger to argue for the largest possible market. For PHE producers this would be a product market including PHE of all subtypes as well as other types of HEX such as S&T and AHX. Similarly, one should argue for as large a geographic market as possible, ideally global. In both markets, constraints would include present as well as future competitors.

The aim of the following section is to show an industrial manufacturer, in this case a PHE manufacturer, would go about arguing a market that is as large as possible. This will be based on the *current* market structure. Market structure will inevitably change, irrespective of product, and the reader will thus be expected to adapt the information put into the tests below according to the market structure of the relevant product *at the time* of appraisal.

Temporal perspectives, being irrelevant to this product, will not be discussed in the following presentation.

6.1 Constraint hierarchy

Given the discussion above (s.4.1.1) about the hierarchy between demand and supply-side considerations in market definition, one ought to consider in the beginning of an analysis how important either one will be in the particular instance. However, looking at what has so far been said in relation to the PHE industry, this author would suggest that this might not be quite as critical as is sometimes the case. On the product-side at least, excessive fragmentation need not be the inevitable consequence of a strictly demand-oriented approach to the HEX market. Given the highly differentiated use of HEX in industries of a wide variation, a market fragmented further than between the three main technologies would require a division into various subtypes. Due to their great overlap of use, this would make little sense. The main issue will thus be to make these technologies considered a single market, not to avoid a fragmentation into even smaller ones.

That being said, demand-side considerations should suffice to include S&T and PHE in one market, but will not be enough for including AHX. For this, one needs to look at supply. The above discussion on demand hierarchy established that supply-side considerations have been decisive in various cases, including a certain element of potential competition in the near future. The onus for bringing this into consideration is on the concentrating undertakings. If they manage to get this included, this will substantially enlarge the market, potentially being decisive on the case. The potential of including a range of actors not currently supplying PHE will therefore be discussed.

As a final remark, the result of any test used must also be questioned as to whether being indicative to substitutability in both directions or just in one, i.e. of a one-way market.

6.2 The product market

6.2.1 Demand-side substitutability

6.2.1.1 Applying the SSNIP and connected econometric tests

The SSNIP test, though highly unlikely to bear fruit itself, will probably affect the outcome of a case. One must start by finding a focal market, preferably by using price elasticity tests and critical loss analyses *as far as available*. This is probably the Commission's first step as well. Consider what sources of information are available to feed into it. Should one have access to consistent and verifiable documentation of industry developments, this would indeed provide an upper hand, both at this stage and later. Especially evidence of **price elasticity** and **critical loss analyses** are relevant if performed at the time of a contemplated concentration.

Regardless, an attempt to perform this test will provide a starting point for the next step, i.e. looking to the wide array of other quantitative and qualitative tests described in chapter 4, to complement these results. Strictly quantitative evidence most times will not suffice. For example, though critical loss analyses might indicate the amount of customers *needed* to switch from a product to make a SSNIP unprofitable, and though price elasticity tests might indicate the *likelihood* of them doing so, actual behaviour, should it differ, will most likely outweigh this.

In the hypothetical scenario being investigated, actual present behaviour is instead best understood by studying attitudes in demand. Furthermore, should conversely the sought after quantitative evidence not present itself, qualitative evidence alone will suffice. It is thus fairly safe to say that, *excluding very rare cases*, the main focus should be on the following steps.

6.2.1.2 Evaluating past market behaviour

A good starting point would be to look at actual **switching data**, from PHE to S&T or vice versa. Such evidence is of course highly indicative of substitutability, especially in the light of **shock analyses or event evidence**. The heat exchanger industry provides several examples of shocks in the past affecting the prices of either the S&T or the PHE segments of the market more than the other, mainly in the form of increased prices in particular metals, such as titanium, nickel and copper. How demand reacted to such asymmetric increases and other shocks would be highly suggestive of their interchangeability. Also, customer reactions following the 2008 credit crunch and other economic shocks will be indicative.

Events would include the introduction of new types of HEX. Actual examples include plate and shell and other all-welded PHE sub-types, which have widened the extent of the PHE market into areas previously covered only by S&T. Once again, if this or other similar events siphoned demand away from S&T, it will be indicative of a single market.

Conversely, long term **stability of demand** in the face of such capacity expansion would be damning, should one assume that the introduction of higher capacity PHE represented an attempt to compete with S&T in new areas. Should the market be so stable, it will be important to find an explanation for this that does not imply separate markets.

Order and bidding data showing that either type is preferred by particular types of customers might indicate separate markets. However, if product characteristics and functional interchangeability (see s.6.2.1.3) still indicates substitutability, this will normally be more decisive.

All of the evidence mentioned in this subsection have a drawback in common. Referring only to past events and behaviour, they do not necessarily represent the market at the time of the concentration. There are however several sources to complement these that do so much more accurately.

6.2.1.3 Evaluating the present – the non-measurable...

Moving on from the past to the present, the next step should as mentioned be to take a look at **product characteristics** of PHE compared to S&T and their **functional interchangeability**. One has to ask, what are the relevant *objective* differences for customers when considering switching from one HEX to another following a SSNIP. It ought to be clear to anyone performing an analysis that PHE and S&T share many characteristics, but the question is if these will be sufficient for them to be mutually substitutable in practice.

Essentially, for every PHE function, there is an S&T alternative performing the same and vice versa. Only at the extremes of demand are there variations

from this norm. However, as there has been steady increase in PHE capacity towards more extreme pressures/temperatures, the areas where either type might be exclusive are liable to shrink. Still, at any given point, one must consider the extent of such areas, as well as those where switching costs (see below) might counter benefits from switching, as such phenomena allow for the possibility for discrimination, thus indicating separate markets.

At the moment, and most likely in the future, the objective differences when choosing between various types of HEX seems to be the following:

1. Efficiency – Decisive where media exchanging heat, need to be close in temperature, where greater efficiency thus would reduce costs. In these cases, PHE gain a competitive advantage.
2. Flexibility – PHE will gain a competitive advantage where volumes of the media exchanging heat might change over time.
3. Weight and size – In cases where this is an issue, PHE will gain a competitive advantage as they weigh less and take up less space for the same capacity.
4. Servicing needs – Scarcity of space might affect what HEX is chosen. PHE require less space for service than S&T. Frequency of service might benefit S&T especially where very corrosive fluids might make replacing gaskets into a cost issue.
5. Pressure and temperature limits – At higher pressures and temperatures, only more sophisticated PHE can compete with S&T. Such PHE are provided by less manufacturers. At the end of the spectra they cannot compete at all. Thus, the more extreme the pressure and temperature, the more attractive S&T becomes.
6. Price – If the same result can be achieved with a cheaper product, it makes sense go with the cheaper alternative. Even so, price needs to be considered together with the other capacities of the apparatus. Also, as there is a connected market for HEX for spare parts, service etc, price must be calculated after discerning whether this creates either a downstream market or a system market (see s. 6.2.3).

The PHE manufacturer considering a merger should strive to establish that in the vast majority of cases, customers will be free to choose between PHE and S&T, and will do so based mainly on price.

Nevertheless, whatever might be the results of the above test they might be offset if *subjective* **consumer preferences and perceptions** indicate belief in non-substitutability, in spite of *objective* similarities. A possible claim could thus be that conservatism amongst traditional S&T customers reduces the potential for PHE sales. Speaking for this is the longer market presence of S&T, giving customers greater opportunity to get accustomed to them. PHE, might thus be hindered in their marketing, having only comparably recently reached the more extreme capacities that S&T have long had.

However, what is striking about cases where preferences have been determinant is that they involve *consumers*, typically less informed and

cost-benefit conscious than the industrial manufacturers that are in the overwhelming majority of cases the purchasers of HEX, which will thus speak against their relevance on this market.

6.2.1.4 ...and the measurable

Also speaking against this, is the fact that customer preferences in the past have only been decisive in combination with corroborative evidence such as surveys or absolute differences in price levels. Certainly, should such evidence be presented, this would be damning. However, from the current perspective, looking at **absolute price levels**, such results seem unlikely and can be refuted if presented. Though due to their great internal variation, it is impossible to compare prices generally between different HEX,¹⁶³ S&T and PHE, where actually intended for the same purposes and capacity might well have very different absolute price levels. Generally, an S&T will be cost more *if* the same material is used as in a PHE, as for the same purpose and capacity an S&T will need more material than a PHE. One will then have to ascertain whether the price of S&T is generally higher than PHE due to this. If so, this would mean that customers choosing S&T over PHE are prepared to pay higher prices for the former to perform the same tasks. The ground rule in such circumstances is that this indicates a genuine belief in the two products being separate.

Nonetheless, there are exceptions to this rule, and where a price analysis suggests absolute price differences, one must question whether any of those might be relevant. Especially one should then consider the fact that S&T producers are not bound to use the same materials as PHE producers. Instead, cheaper materials are often used to balance out prices. Depending on its possible frequency, and the extents of its actual effect on prices, absolute price levels might therefore not be very problematic. Looking at the current market this seems to be the case.

Of course, should prices end up being very similar, this similarity might still be coincidental or temporary. To find out whether this is so, one might look at **price correlations** over time, assuming such data is available, and having adjusted it for false correlations.

All of the above can be countered however, if **switching costs and other barriers** keep customers willing to switch from actually doing so. Judging from the current market, such barriers seem unlikely. Generally, switching between various makes of HEX requires no greater adaptation of facilities. Products are normally simple to operate, neither requiring any particular training, nor software, licensing or other equipment. Where needed the tendency is for customers to design their own.

¹⁶³ Prices will vary greatly depending on the purposes and specifications of their intended user, and tend to swing greatly with time mainly due to switching resource accessibility.

If however, such switching costs or barriers would be established for particular customers, this might facilitate **price discrimination**. This will be of particular risk regarding PHE of very high capacity, in places where S&T might be unsuitable. Examples include oilrigs, where space scarcity might constrain customers to switch to S&T from PHE. To avoid such customers from being broken down into separate markets one needs to emphasise chains of substitution, making it possible for products below the highest capacities to compete. This of course would be greatly strengthened by pointing to actual switching statistics (see s. 6.2.1.2). Also, it should be emphasised that such customers stand for a very limited part of the market.

6.2.1.5 Other sources of evidence

Trade relationships might prove influential on a decision, so one must consider to what extent special relationships between particular suppliers and customers might affect their willingness to switch products. Looking at the HEX industry's current shape, such relationships certainly factor in some cases, but the question is whether SSNIPs in general might be upheld due to them. This seems unlikely.

All sources of evidence, including those mentioned above, will be weighted depending on the source. **Internal company documents** might indeed prove valuable. Training documents/programs, marketing strategies, market surveys, etc., from *before* the investigation, showing a genuine belief by the company that PHE and S&T compete with each other could well prove valuable. Their weight should however not be overestimated. Of course, **views of customers and competitors**, including web-sites, manuals brochures etc. if accessible will be equally valuable/questionable, for the same reasons. When looking at these, it would make sense to highlight views of competitors/customers without an interest in widening the market, typically smaller producers and customers. Even so, it cannot be taken for granted that these views reflect a genuine belief.

6.2.2 Supply-side substitutability

The most important test in arguing supply-side substitutability is **switching costs**. There is a lot of ammunition here for a PHE producer to utilise. Generally, larger producers of PHE, producing particular subtypes, will have the potential to quite quickly start producing most other subtypes as well, barring only those few that are protected by patent. Very many smaller producers also put pressure on the simpler types that make up the majority of PHE sales. This likely affects prices in higher market segments, assuming there are functioning chains of product substitution. This should be argued. Within S&T production, established suppliers will find it even simpler to extend their product lines, and there is no barrier for the average producer to start production in all other types.

Between S&T and PHE however, there is comparably very little similarity concerning production mode. For producers of one type to switch to

another, a large amount of new equipment and training would have to be paid for. The same holds true should one consider switching from PHE, to AHX, perhaps even more so as the products are largely used for different purposes. It would still however be easier for either one of these producers to switch to PHE production than for a producer entirely fresh to producing HEX equipment.

Supporting this conclusion is the large amount of overlap of producers between one and the other types. It is quite common for producers of either type to start production in the others, although a larger proportion of PHE producers seem involved in the other industries than vice versa. This could be taken as evidence to infer that similar basic principles make it natural for producers of one type to expand into others, which in turn indicates that SSNIPs might be reined in by this factor. The arguability of such a conclusion is most clear regarding S&T as the similarities in principles of function and production are greatest there, but one does well to argue to include AHX.

Producers entirely new to HEX production are unlikely to have the ability to produce larger plates or to fulfil higher standards of quality. Consequently, they will probably not *directly* affect prices in these market segments. Chains of substitution could however mean that they would *indirectly* affect the prices of more complex products.

Regarding smaller PHE sizes, producers in that segment seem to be finding it increasingly feasible to break into the market. As is the case with AHX and S&T producers the main costs for new manufacturers commencing PHE production would be purchasing the necessary equipment as well as training of staff. Equipment involves primarily a hydraulic press, and then, at higher complexities, welding and fusing equipment.

Traditionally, buying a hydraulic press has been expensive to the point of being an insurmountable barrier for market entrants. However, there has been a successive reduction in prices of these during the last few decades, facilitating a vast increase of smaller producers seen during a roughly corresponding period. At the point of consideration, one will need to discuss the impact of the price of the press compared to the profitability of making PHE at that particular moment.

The next difficult step is in welding. The vast majority of PHE do not require such, but for those that do, this might keep new entrants from being competitive in the short term in those particular segments. However, this obstacle can be overcome and is likely to be so when prices rise sufficiently.

Starting production of S&T would be comparably simpler. How simple will be influential on whether the PHE/S&T interrelationship should be considered a one-way market. It would seem that, unlike with PHE, in-house production of S&T is quite possible as the necessary components can be bought separately with comparative ease. This holds true even at the

extremes of pressures/temperatures/sizes. It is thus quite possible for new entrants in the S&T segment of the HEX market to pose a constraint on PHE producers.

Compared to cost issues, **other barriers to switching** seem minor. Legislation might at any point be introduced, hindering new market entry, but this is unlikely to prove an important issue. Only in very special areas, with high safety requirements ought legislation have any greater impact. This will remain the case irrespective of whether customers contemplate PHE, S&T or AHX suppliers.

Likewise, very little in the way of technological barriers exist regarding either PHE, S&T or AHX. They are all well-established products. Patents on PHE types regard mainly minor improvements on existing, widely available pattern designs. It would not seem that this would cause obstruction to new market entry.

Shock analysis or event evidence once again will focus on crises such as those affecting metal prices, financial instabilities, the introduction of new product types etc. However, in this instance, the question is whether any of these have prompted *producers* to switch, or to start supply to traditional PHE customers in the past. For example, during shortages of metals like titanium, it would be likely that producers of other less titanium-dependant types than PHE might gain a competitive advantage visible in sales.

6.2.3 Particular issues in determining the RPM

There are several **connected markets** when considering the relevant product market for PHE including gaskets, plates and services. It is important that one considers how these will affect the abilities for demand and supply to switch, following a SSNIP. The effect, depending on circumstances, might be the establishment of either a downstream or system market.

All producers should avoid the establishment of downstream markets, according to the now familiar assumption that larger markets are better. However, there is good reason to think that this might not be an issue regarding PHE. Plate patterns are typically patented, so supply is monopolised. Concentrations will therefore not create or strengthen dominant positions. Conversely, the segments for gaskets and services are too heterogenous for one PHE producer to easily dominate.

Nonetheless, markets change and these circumstances might differ in the future. It should thus be worthwhile pointing out that the nature of typical PHE customers, as commercial manufacturers, makes them highly likely to include the prices of these secondary products in their calculations, thus indicating them as system markets. In fact the cost of such replacements and servicing is high enough to often feature as a decisive issue when choosing between PHE and S&T.

In-house production does not seem to be a factor in the more complex PHE market segment but might become one in S&T. A SSNIP in PHE could thus potentially be countered by industrial manufacturers making S&T for their own use, starting commercial production. This however is quite speculative.

Where relevant, **chains of substitution** have already been discussed.

It is highly unlikely that separate **procurement markets** should be found for any of the raw materials or services used to produce and sell PHE, as few of these cater exclusively to PHE producers.

The same applies to **technology markets**, which are unlikely to be relevant as there is very little technology licensing in connection to HEX. Likewise, innovation is quite rare within PHE production, and barely a factor in S&T, pointing to great unlikelihood also of there being an **innovation market**.

The **branded v own-label goods** distinction should not be emphasised.

6.3 The geographic market

6.3.1 Demand-side substitutability

The SSNIP test once again serves as a starting thought experiment. However, although normally easier to apply in the geographic than in the product market, statistics have shown that it will be even less likely to see actual application here. Instead, focus should lie on the following tests.

Traditionally, the product price to **transport cost** ratio has been the most dominant test in establishing the relevant geographic market. Essentially, it requires showing that transport costs in the suggested market would be below the 5-10 % of a SSNIP. This then needs to be contrasted with **delivery time**. The closer the transport cost to product price ratio, the shorter must be the average transport time.

Today it would not seem that these factors would greatly affect the HEX industry. It is true that some customers might indeed require unusually speedy delivery, necessitating air-transport in rare cases. However, even in these circumstances, prices will only very rarely reach above 10 % of the total price as modes of transportation are normally substantially cheaper, going by sea or by land. Global transport, as opposed to local will in general take longer but is unlikely to increase prices substantially. Most producers will have the required products in stock, ready to be shipped at demand, and larger producers tend to have a network of suppliers and agents in most regions to respond quickly to consumer demand.

More complicated products and custom jobs might require longer time to delivery. Due to the nature of HEX customers however, as commercially

oriented undertakings, both price and delivery time are aspects that are likely to be calculated with when ordering products.

Pricing data should further support a global market stance. The price range for HEX orders is extensive, including consumers buying single HEX for as little as €100 or less at the lower end, and up to millions at the opposite. The vast majority of orders will however land somewhere in-between fetching prices in the tens and hundreds of thousands. This means that SSNIPs will mean that for most purchases, a SSNIP, a 5-10 % increase, will be felt. Commercial producers will likely have both means and knowledge to react to such significant increases by going outside of their own segment of the geographic market, many times even arranging transport themselves.

Corroborating evidence of price levels actually correlating in various regions would be highly beneficial to the above argumentation. However, even where prices in fact vary greatly between regions, this need not be decisive as long as there is any cause to treat such exceptions as anomalies. Examples of this would include discrepancies caused by illegal market activities such as cartels or nationally erected illegal trade barriers.

There is nothing in the nature of HEX per se that would make their substitutability susceptible to **national preferences**. However, national barriers to outside producers might, legally or illegally, be set up at any time, restricting access to or within the EU's internal market. Furthermore, cultural factors might be a driving force in establishing national preference, for example by benefitting manufacturers with stronger cultural connections to the relevant region. Therefore, one needs to look at other sources to establish the existence of national preferences.

There seems to be a certain belief in varying **market structures**, indicated by the tendency of HEX companies to organise sales in regional entities. Indeed, in the past,¹⁶⁴ geographic markets have been narrowly defined due to such tendencies. However, in neither of those cases was supplier organisation the sole determinant on the outcome, but was only relevant in the light of actual observed customer tendencies. Currently, HEX customers do not limit themselves to purchase solely within the limits indicated by producers' delineation of market segments.

Nonetheless, it will still be important to be able to present a plausible alternative explanation for nationally/regionally defined company subdivisions. Doing so in advance through **internal company documents** will also be of some value, of course bearing in mind the weaknesses of such evidence (see s. 6.2.1.4).

It would also make much sense to emphasise **geographic purchasing patterns and trade flows**, assuming that they support the existence of a global market. This would be the case if one could point to actual

¹⁶⁴ *Michelin v Commission* paras 23-27 and *Procter & Gamble/Wella* paras 24 and 26

reoccurring instances of customers going outside their own region to purchase HEX. More is better. Once again, **shock analysis or event evidence** provide illustrative evidence of switching tendencies. Such occurrences are less evident regarding HEX in the geographic market, but do exist. Later years have seen many market entries taking sizeable parts of the market, especially in Asia. The greater is the impact of establishment on demand, the stronger is the case for a single global market.

Of course, what has been said (see s. 6.2.1.4) on **views of customers and competitors** applies here as well.

6.3.2 Supply-side substitutability

Although their labelling as “**other**” **barriers to switching** indicate them as less important, this is likely to be the most decisive issue in defining supply-side substitutability. Globally, such barriers will most definitely be present. However, the question is whether these would offset the willingness of a supplier in one region to commence supply into the market in any other part of the world following a SSNIP. There can be no definite answer to this.

Presently, several companies supply globally. Nonetheless, it is important to emphasise even those suppliers that are not yet global but that have an international network. Efficient international networks increase the likelihood of undertakings quickly starting supply into the EU following a SSNIP. Also, the very quick expansion during the 2000s of LHE, a company not previously involved in HEX production should be brought up. As such, it could be taken to indicate that the global market is open to new entry, thus increasing the scope of potential competition.

Nonetheless, identifying **trade flows and pricing data** might have some importance. The larger the amount of suppliers, and the larger the volume of goods entering the EU’s internal market, the greater the likelihood of identifying a single global market, or at least one that is EU wide.

It would be natural to expect **shares of supply** to differ between regions in a global market but such tendencies might also cause regions to be viewed as separate. This will depend on the stability of such shares. The greater the regional differences, and the more variations are shown as impervious to change, the stronger the indication of several markets. Should there be such indications one should consider alternate explanations. However, on their own, they are probably not decisive.

6.3.3 Particular issues in determining the RGM

Chains of substitution might affect the estimation of any of the abovementioned evidence. Consider here, whether, despite any of the evidence above speaking for a fragmented global market, different regions still follow similar pricing trends. If so, this might indeed speak *for* rather than against an integrated global market.

7 Concluding remarks

A lot can be said about the system described in the 50 odd pages above. Criticism towards it is indeed abundant, much of which is understandable. Looking at the amount of effort put into answering the question of how to properly structure the system during the past half a century, this author is not so deluded as to believe himself to possess a solution to any of the problems affecting the area. Nonetheless, there is an intrinsic value in discussing the strengths and weaknesses of the system, as discussion will hopefully lead to ideas of improvement. This chapter will strive to summate difficulties encountered during the course of this dissertation and from that discuss some conclusions as to the value of the system in order to facilitate the reader's further thoughts on the subject.

The most obvious sources of frustration for those having read this essay ought to be the confusing hierarchy between constraints as well as the close to total lack of hierarchy between tests within those constraints. This absence of structure would have caused confusion even in a system with very few variables. In this system however, the multiplication of up to three dimensions, each containing supply as well as demand-side constraints, both containing a non-exhaustive list of tests, makes for advanced legal arithmetic.

Even more so, as the amount of dimensions will depend on circumstances, as the temporal is considered separately sometimes, but is included in the product market in others, or not considered at all. Further, supply-side constraints that are not really supposed to be considered during the market definition stage are in practice considered quite often. Moreover, where included, these constraints may or may not include the fuzzy concept called "potential competition".

Each case can consequently be decided on a plethora of different grounds, irrespective of how similar cases have been decided in the past. What is worse, the amazing complexity of this system ensures that one would be quite justified in suspecting that perhaps any case can be decided any way – just as long as the "right" tests are used.

Add to this the very difficult task of first understanding the application of these tests, and then applying them. This difficulty will have occurred to most readers especially regarding the various econometric tests, including the pivotal SSNIP test. Already with the introduction of the latter was there concern that this area of law was being taken over by economists. Only an advanced understanding of economics would allow a true understanding of its workings. Although in practice, the SSNIP test has proven less important than what one might believe from looking at the RMN, increasingly accessible statistical material is likely to make its application simpler. The thought is that this will make predictability greater in the long run.

However, when the long run might occur is still unclear. As of yet, beyond the SSNIP test's application as a "conceptual foundation", "steering the mind" in applying other tests, this and other econometric tests seem only to serve to increase an already undesirable multitude of tests, each potentially to be given decisive weight depending on the circumstances. This creates more jobs for economists in legal work. It does not yet benefit clarity.

Why then should one strive to clarify this perceived quagmire? Certainly, there are those that applaud this state of things. Undertakings should not be allowed to become too powerful, and a healthy amount of uncertainty would keep them from trying to push boundaries. However, the problem from a societal perspective is not that companies are unable to push well established boundaries. Rather the problem is that the boundaries that do exist are uncertain. With lack of clarity comes a very substantial disincentive to undertakings considering concentrations. Stakes for the individual undertaking contemplating concentration are incredibly high, potentially entailing crippling fines. Consequently, the question is how many those companies are that choose to walk away from a concentration when realising the uncertainty of the outcome.

Society allows concentrations of a certain magnitude because of a fundamental belief that they create benefits for the community at large. Correspondingly, some concentrations are viewed as negative, thus justifying their countering. A properly functioning system for market definition should help divide concentrations between those two categories, allowing the positive to flourish and stopping the negative. The danger however, of a complex legal system is that the amount of expertise needed to navigate it becomes so costly as to one day outweigh its benefits, making the proper placement of concentrations within these categories inefficient. The way that the system is currently developing, steadily increasing in complexity, it is perhaps time to take caution.

Even so, there are other issues beyond that concerning efficiency, that might be of even greater importance. The uncertainty of the system threatens the fundamental legal concepts that like cases should be decided alike as well as the right for a person not to be penalised for behaviour that is not clearly illegal at the time of committing it.

One would not necessarily be wrong to object that these do not apply here. These are *human* rights. Whether a legal person should be entitled to such is a question that is much too big to be answered here, and greater scholars can decide on its relevance. Nevertheless, assuming that either of these principles apply to companies, there would seem to be a breach here. How can two cases be deemed alike if their very perception is entirely dependent on tests that will not necessarily be used to determine both? How is one supposed to predict the illegality of a concentration if it is not clear what tests will be used to determine their lawfulness? Enforcers disregard these issues at their own peril, especially so in the now likely scenario that the EU accedes to the European Convention on Human Rights and Fundamental

Freedoms. This author would not be surprised to see future cases of market definition being brought to Strasbourg.

So, on quite a few points this is a flawed system. The question remains however, what, if anything should be done about it. In fact, there is no simple solution. Perhaps the Commission should legislate on constraint hierarchy, or the CJEU ought overturn its decision not to themselves create such hierarchy. Maybe a system would be preferable where hierarchies between tests are established for different categories of concentrations. Irrespective of the chosen solution, new problems would definitely entail. In fact, the immense difficulty of this task, has kept these distinguished institutions from trying to solve the problem during a half a century. In the meantime, the system has persisted thanks to extensive pragmatism on the side of both enforcers and concentrating parties. That being said, a *legal* system can not persist only on pragmatism. There must be at least a perceived right and wrong answer to a given question. When every single case can go either way, there is something wrong.

Thus, the EU system for market definition must evolve. This does not mean that it is broken. Other jurisdictions struggle with exactly the same issues. It has flaws, but the RMN represented a vital step towards improving it. This instrument further solidified a system for market definition that today is part of what might be the leading innovator in antitrust law. That ability to innovate should now be turned to market definition. Action is needed to organise the system better in the future. Before it actually does break.

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