ARTICLE 102 TFEU AND ONLINE SEARCH ENGINES

- The Market Realities Affecting the Product Market Definition

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1. Introduction

1.1 Background

The Network economy of today came with a new market structure and business ideas not previously seen before. In the Network economy the greatest network of them all is the Internet, which allows an unlimited number of users to share, enjoy and spread information on a global market. The information available on the Internet is though of an enormous volume and Internet users use different tools to sort out the information of relevance and interest. For this online search engines have been developed. They help search users to rank the information according to relevance, thanks to advanced search algorithms. Today, Google is the world’s leading search engine, with above 90 percent market shares in most European countries. In a decade and a half Google has gone from a small two-man company interested in sorting information online to a global company with over 50 billion dollars yearly revenue aiming to index all the information on the world wide web. Google’s ranking of search results has led to a couple of vertical search engines alleging Google to abuse their dominant position on the market by manipulating the search results disadvantageous to the complainant. The Commission therefore has opened a formal investigation to review Google’s potential breach of Article 102 of the Treaty on the Functioning of the European Union. Certain business practices are not allowed for a dominant undertaking, according to Article 102. In order to determine dominance the relevant market must firstly be defined. The business idea of Google and other similar search engines are more complicated than traditional business ideas on which Article 102 originally concerned.

Google performs a fairly traditional function, but in a novel medium, and the economics of its business are poorly understood. As a result, whether Google’s businesses particularly its advertising businesses – exist in the same economically relevant market as more traditional forms of advertising remains unclear. […] Thus, not only the

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1 Hereinafter shortened Article 102 TFEU and/or Article 102.
medium but also Google’s technological and business innovations differentiate it from more traditional competitors.2

The Commission’s market definitions in Article 102 cases have repeatedly been criticised since they have not been sufficiently detailed and not reflecting the market realities. This thesis will examine the market realities affecting the relevant product market for online search engines, with Google and the Commission’s current antitrust investigation in focus.

1.2 Aim
The aim is to examine Article 102 TFEU in relation to the Network economy and online search engines. The question at issue is:

How should the concepts of relevant market and dominant position be interpreted according to Article 102 TFEU in the context of online search engines?

1.3 Method and Material

1.3.1 General about the Method
The foundation of the thesis is the legal dogmatic method. Legal dogmatic method shall be understood as a method to retrieve information about and describe applicable law in the chosen field and to describe the structure and system of this field of law. The method aims at bringing forward the legal system as a coherent network of regulations on different levels.3 All sources of law are part of the legal dogmatic method used, where the sources are legislation, preparatory legislative documents (if present), case law, administrative practice and doctrine.4 The legal method is complemented by methods for legal science, where an economic analysis of the law is used to some extent. An economic analysis of the law, for the sake of this thesis, consists of economic arguments

to describe the effect of some assumptions on the market realities. The economic analysis of the law is though not the main method used.

The method for collecting material is of a traditional nature. Online search for academic literature has been of great help to find relevant material, as well as offline search at libraries. The amount of material present for the chosen subject is though limited, why the thesis can be criticised due to the problem of supporting some of the statements in the author’s analysis of the question at issue.

1.3.2 EU Law differ from National Law

The nature of EU law differs from the nature of national Swedish law, why the analysis of the legal dogmatic method also will differ from the traditional legal method used in Sweden. The traditional legal method in Sweden takes into account relevant legislation, preparatory work, case law and doctrine. In EU law the case law has a strong impact on legal interpretation, while the preparatory work has almost no significance.

The thesis focuses on two legal concepts of relevance (relevant market and dominant position) for assessment under Article 102 TFEU, why the sources of law will consist of legislation, case law from the General Court and the European Court of Justice as well as guidelines and frameworks regarding the EU Commission’s practices. Furthermore relevant literature and argumentative articles will be used to highlight the interpretation of the two legal concepts examined. The review of these sources will help identify the problems, analysing them and to reach conclusions based on the material.

Neither in written law nor in case law can you find any satisfying answer on how to interpret the concepts at issue regarding online search engines. In the absence of guidance from written law, case law shall be reviewed according to the legal hierarchy. Since case law do not provide answers to the question at issue authority decisions from the EU Commission will be examined. These do not either satisfactory answer the question at issue, why doctrine is the main

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source of information. The subject of the thesis is of such nature that it is not possible to provide a legally assured answer, the aim is to find and analyse potential interpretations.

Even though the thesis will be argumentative to some extent, the intention is not to conduct a discussion de lege ferenda. The intention is to describe applicable law and to analyse the interpretation of applicable law in light of the market realities for online search engines.

1.3.3 Case Law
The case law on Article 102 is extensive and the definition on relevant market and dominance is well explored by the courts, at least when it comes to traditional markets. This extensive case law will only be reviewed when relevant for the question at issue. To highlight the question regarding online search and online advertising two Commission decisions regarding mergers will be examined; Google/DoubleClick\(^6\) and Microsoft/Yahoo!\(^7\). Other case law and decisions from the Commission will be mentioned, but not analysed in detail. The Commission’s preliminary answers in the current Google investigation\(^8\) will be analysed in detail and the conclusions of the thesis will stand in relation to their preliminary assessment.

The methods for interpretation of the relevant market and dominance that has been formed by EU case law will be used to explain how this could apply to online search advertising.

Certain foreign case law and authority decisions, mostly from the US, will be mentioned, it is though not meant as a comparative study of the law. These cases will only help understand how the question at issue has been dealt with under other jurisdictions.

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\(^7\) Commission Decision of 18 February 2010 in Case COMP/M.5727 – Microsoft/Yahoo! Search Business.

1.3.4 Doctrine

For the understanding of the article and the traditional interpretation the book EU Competition Law (2011) by Alison Jones and Brenda Sufrin has been fundamental, together with case law. The authors are both solicitors and professors of law; Jones at King’s College London and Sufrin at University of Bristol. It should though be noted that the thesis is based on the assumption of a reader well orientated in EU competition law regarding unilateral conduct.

Carl Shapiro and Hal R. Varian were early adopters of the term the Network economy and they introduce the concept in their book Information Rules: A Strategic Guide to the Network Economy (1999). Their book has been important for the chapter on competition in the Network economy. Shapiro is professor of business strategy at University of California, Berkeley. Varian is the chief economist at Google and professor emeritus in three departments at University of California, Berkeley. The objectivity could be questioned, when realising that one of the authors work for the company that this thesis focus on, Google. Varian started to work as chief economist for Google in 2002, three years after the book was published. There is no reason to believe that Google had any impact on the substance. The book should therefore be seen as objective, though of course with impact from the authors’ personal preferences.

When it comes to the chapters about Google, online search and online advertising, the company itself has been of great importance with their information on themselves that can be found online. Three nonfiction books have been of help when describing how Google works and what their business model is, which of course is necessary when using Google’s search engine as an example of a Network economy business in the light of the EU competition law. For the analysis of the potential market definitions a great amount of argumentative papers will be used. When describing such a huge and world-wide popular company it is hard to find objective sources, everyone has an opinion about Google – good or bad. Some of the sources for the thesis are arguing in Google’s favour and some others think that the allegations against Google are

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9 The three departments are business, economics and information management.
right. When arguing papers are referred, where the objectivity can be questioned, a note is added to alert the reader. The thesis does not take any particular side, pro or against Google. Opinions from both sides are represented, even though sources positive to Google outnumber sources negative to Google. The analysis and conclusions at the end is the author’s personal conclusion based on the reported theory and all represented arguments.

1.3.5 Limitations
There exists a limited amount of material on the different market definitions for online search and online advertising, and even fewer sources on a single market definition for Google as a two-sided business. There is a lot of material regarding Network economy available, however the characteristics of the Network economy market does not take into account all features of the Google case. In addition, enough reliable econometric data of relevance is not publicly available. As a result of the limited material, the attempt to define the relevant market for online search engines reflecting the two-sided business structure in chapter 6 is primarily based on only one source.\(^{11}\) It should also again be noted that several of the sources regarding Google are subjective, however as far as the thesis author is aware this is not the case with the source for the analysis in chapter 6.

1.4 Delimitations
The thesis focuses on Article 102 TFEU and more specifically two of the main components of the article; relevant market and dominant position. It is not possible in a master thesis of this length to conduct a market analysis as well as studying the definitions and methods. This thesis analyses the definitions’ and the methods’ compatibility with the Network economy and the characteristics of an online search engine, where the company Google is in focus.

The thesis does thus not strive to give a definition on the relevant product market, but to interpret the methods for defining such. Focus will be on analysing the problems with interpreting the relevant market in accordance with a collo-

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quial definition of online search, which to some extent seems to be the case within competition authorities.

The thesis has the online search engine provided by Google in focus. Google is without hesitation the most used online search engine in EU and current antitrust investigation is performed by the EU Commission, which makes Google’s search engine business a suitable example for the analysis of the relevant market and dominance for online search engines in general.

An urgent public debate regarding privacy and user information is conducted in most societies all over the world. When it comes to Google most discussions end up in a moral debate on their collection and use of user information, this could easily be the result in this thesis. It is though not the intention of the thesis to discuss moral aspects, ethics or privacy related to Google’s usage of user data to refine their search algorithm. However, user data will be discussed in relation to network effects. Questions regarding intellectual property law will not be discussed, even though these are of great importance for companies’ sustainability in the Network economy. But that is another aspect of the new economy, how to survive and make profit in the Internet world.

The thesis is delimited to EU competition law. In a short paragraph under the Google-chapter, the antitrust investigation in US and the US government’s decision in that case will be mentioned. Many of the sources are also based on US antitrust law, which is similar though not identical to EU competition law. The thesis is not a comparative study between jurisdictions.

1.5 Structure of the Thesis

Online search is a form of business that takes part in the Network economy, why this new economy will be described in the very beginning of the thesis (chapter 2). Main focus in the chapter on the Network economy will be how the new market structure affects competition and what characteristics causing this new economy.

The thesis then moves on to describing the company at issue, namely Google, in chapter 3. A brief introduction on Google’s variety of businesses will be given. The chapter’s focus lies within the EU Commission’s current antitrust
investigation regarding Google’s potential abuse of dominance. Some parallels will be made to the similar antitrust investigation in the USA.

Chapter 4-6 are focused on the relevant market definition for online search engines. The chapters are divided into online search, online advertising and a discussion regarding this two-sided business. Chapter 4 describes how online search function and what it really is. Chapter 5 do the same but for online advertising. In chapter 6 these two markets will be discussed together, since they form a two-sided market and are tightly linked together. Each of these three chapters ends with an analysis on potential market definitions. The question at issue in chapter 6 is whether or not it is possible to separate these two markets from each other when defining the relevant market. The Network economy’s impact on the market structure will also be factored in the analysis of the relevant market for search engines.

In chapter 7 the importance of the high market shares held by Google will be analysed. Is it possible that Google have significant market power and thus are dominant under any potential market definition?

Chapter 8 will summarise and discuss the analyses performed and provide answer(s) to the question at issue, striving to interpret the concepts of relevant market and dominance in the case for Google and other online search engines. The aim is though not to present one market definition, but to elaborate with the interpretation of the concepts and the problems related to different interpretations.

In the final chapter 9 conclusions from the previous discussion will be drawn as well as a reflection on method, material and the subject for the thesis.
2. The Network Economy

This chapter highlights the main elements of the Network economy and explains the impact it has on competition and competition law. Since online search engines are a product of this changed economy it is relevant to understand the market characteristics that necessary affect the definition of the relevant market and thus the potential dominance. Furthermore, the main characteristics for two-sided businesses are described.

2.1 The Rise of the Network Economy

It is not new that technology evolves, in fact technology has been evolving ever since the industrialisation a hundred years ago. For the industrial economy the basic technology that made it possible was electricity and energy generation. Today the society has evolved again thanks to a change of demand and the emergence of new technology. This new economy is called the Network economy and it consists of for instance telecommunication, media, information technology sectors, high technology industries (such as Internet-based businesses), computer software and hardware and biotechnology. The most important network of today is undoubtedly the Internet, where information is gathered, structured and made available for everyone to take part of on a global market. Networks have always existed, but in different shapes and no one with such great flexibility and task performance as the free Internet. Our everyday life is strongly affected by a demand for information about everything, for everyone and at all time. When Internet was born in the middle of 1990 it opened up a new business sector, the Internet sector. Internet is changing business practices at all stages, from production, management and financing to the relation between seller and buyer as well as the cooperation between firms. The dot.com era came and brave entreprenuers started pure online firms, such as

12 The concept of Network economy origins from the professors Shapiro and Varian and is described in their book Information Rules: A Strategic Guide to the Network Economy (1999). The Network economy is only one concept, of many, to describe the new structure of the economy where information, innovation and technology are of great importance. Examples of other terms to describe this economy (not all with exactly the same understanding) would be the New economy, the Network society, the Internet society, the Information economy, the Knowledge economy and the New productive economy. The thesis will only use the term Network economy, in the meaning described in this chapter.

Yahoo!, AOL, Amazon and eBay. Together they did invent a new business model where they took advantage of the possibilities with Internet. When investors started to see opportunities in these online firms the value of the new business model grew and at some point it became a brand new economy, i.e. the Network economy.\(^{14}\)

The markets in the Network economy are characterised by that the companies are information suppliers in a wide sense and the market could therefore also be called an information market. Information face an unusual cost structure, since it is costly to produce information but cheap to reproduce. In economic terms that is high fixed costs with low marginal costs. Music, as an example, is costly to produce, but once you have recorded it you can reproduce it for a unit cost close to zero. This gives that a cost-based pricing does not work for information suppliers. If they only take a price of 10-20 percent above unit cost, they will never be able to compensate for the high fixed costs. Instead of setting the price according to the production cost, they will have to use a consumer value-based pricing. To price according to the consumers value will lead to differential pricing, since all consumers value the information at stake different.\(^{15}\)

### 2.2 Competition in the Network Economy

The different markets under the Network economy are characterised by rapid technology changes, creation and exploitation of intellectual property rights, a high degree of technical complexity, the need for complementary products and network externalities. This affects the competition structure and thus the application of competition laws. In the Network economy competition is not as much on price as on innovation and competition is, in some cases, not in the market but for the entire market. Competition for the entire market can be seen when one product becomes standard on the market and thus making the firm


dominant in that product market.\textsuperscript{16} This is due to network effects and economies of scale in both manufacture and consumption.\textsuperscript{17} A network benefits from the amount of users, where more users increase the value of the network for each individual user. The market may thus tip towards that network when it has reached a certain number of users, at the loss for competitive networks. Network effects can also rise when a number of complementary products are tied to that network, thus making competitive networks less valuable for the users who want not only the network service but also the complementary products. Network effects, and the possible dominance following, can indicate that competition authorities should intervene at an early stage to prevent dominance on the market. Nevertheless, consumers may benefit from the network effects and one of the foundations of competition law is the benefit for consumers. Economists may even argue that consequences of network effects may be exaggerated.\textsuperscript{18} If a new network (product) emerges with superior benefits in relation to the previous dominant network, consumers will be willing to switch and bear the switching costs and new consumers coming on stream will chose the new network already from the beginning. Dominant positions in the Network economy are therefore often temporal and fragile.\textsuperscript{19} Schumpeter introduced the concept of creative destruction\textsuperscript{20} as early as in 1942, a concept not too far from the competitive situation in the Network economy. Creative destruction is a theory about economic innovation maximisation generated by temporary monopolies, where the social benefits far exceeds the social cost of a short-lived monopoly.\textsuperscript{21}

\textsuperscript{16} See Case T-201/04, Microsoft v. Commission [2007] ECR II-3601 and also the competitive war between VHS and Betamax in the early 1908s, where VHS won the entire market for video formats and became the only standard to count on.


\textsuperscript{19} A. Jones and B. Sufirin, \textit{EU Competition Law}, 2011, 4\textsuperscript{th} edition, New York, Oxford University Press, pp. 353-354.

\textsuperscript{20} Creative destruction is an economic theory similar to theories brought up by Karl Marx already in 1848.

Many debates that the application of competition law should be revised in order to take count for the dynamic competition in the Network economy allowing it to exist.\textsuperscript{22} One of the methods of defining a product market is the SSNIP test where short-term demand substitutability can be shown by a small but significant price increase (5-10 percent). The SSNIP test is based on the assumption of homogeneous products and competition on price. When the SSNIP test is tried on Network economy markets and the dynamic competition structure it often fails to recognise demand substitutability due to the situation that competitive constraints comes not from substitutable products but from new products. The application of the SSNIP test cannot take into account the competitive situation on markets with rapid innovative production and thus an application may lead to a too narrow market definition. A too narrow market definition will in turn constitute high market shares implying market power, when competitive constraints may come from other sources than shown by demand substitution according to price. The importance of market definition as it usually is interpreted should perhaps therefore be down-played as well as the over-reliance on market shares.\textsuperscript{23} C. Ahlborn et al. argues that a better test on market power would be contestability. On a contestable market no firm, no matter of the market shares, enjoy a dominant position, because potential entry imposes competitive constraints and the firm can thus not act independently of its (potential) competitor. Supply side constraints should therefore be carefully considered.\textsuperscript{24} It has also been suggested, by Teece and Coleman, that a multi-attribute SSNIP test would minimise the risk of too narrow market definitions. The multi-attribute SSNIP test should take into account both price and the performance attributes of one product. A change in the performance attributes would induce substitution to or from another. Although, it is not easy to apply such a test relying on qualitative, which in its nature is hard to measure.\textsuperscript{25}

\textsuperscript{22} A. Jones and B. Sufrin, \textit{EU Competition Law}, 2011, pp. 57-58.
\textsuperscript{23} Ibid., p. 79.
Competition authorities need to take into account the market realities and be careful in their assessment of dominance in the Network economy. The special characteristics and the rapid innovation of the complex networks must be well understood in order to avoid erroneous market definitions.\textsuperscript{26}

2.3 Two-Sided Businesses

Two-sided businesses are characterised by serving two separate groups of consumers with services or goods, where these two consumer groups need each other and rely on the provided platform to integrate mutually.\textsuperscript{27} Two-sided businesses are usually characterised by three core functions. Firstly, they function as match-makers by allowing the two groups to find each other easier. Secondly, they strive to build audience since the bigger the audience the greater the chance of finding a suitable match between the members of the groups. Finally, by providing a common platform they can reduce costs for both groups.\textsuperscript{28}

Two-sided business are nothing new for the Network economy, it can also be seen in traditional and offline businesses. The printed newspaper is mostly financed by advertisers, while readers can buy the paper at a low cost (too low to in itself finance the production). Two groups of customers can thus be seen at the newspaper platform, where both of them are dependent of the other. The advertiser reach out to its (future) customers and the reader can access the paper at a reasonable cost. Another example would be the credit card company who takes a per-transaction fee to cover the costs, while the credit card holder and the merchants that accept credit cards can transact with each other. The card and the card reader provided by the credit card company would constitute the platform. Network effects are a main characteristic for two-sided businesses. A theoretical example would be the business idea for the credit card company. If the price to hold a credit card was high fewer customers would have one. That would affect the merchant’s willingness to invest in a credit card reader, which in turn would make customers even less interested in holding a

\textsuperscript{26} A. Jones and B. Sufrin, \textit{EU Competition Law}, 2011, p. 354.


\textsuperscript{28} Ibid, p. 5.
credit card (there is no use of a credit card if you cannot use it). On the other hand a low cost for holding a credit card attracts more credit card users, which make merchants more interested in investing in a credit card reader. The possibility to use a credit card when you purchase will thus increase and even more consumers will be interested in holding a credit card.\(^{29}\)

In the same way as with the newspaper or the credit card company, search engines are match-makers functioning in a two-sided market. The two groups of customers consist of search engine users and online advertisers. The platform for match-making is the search engine. One could argue that search engines are part of a three-sided market, with users, content providers and advertisers as the three groups of customers. Though, the functioning mechanism for satisfying the users’ and the content providers’ demand is parallel, why there is no need to separate these two.\(^{30}\)

The Commission have long standing case practice in defining the product market in industries with two-sided demand. Their practice is to deal with each side separately, even though they recognise the relation between the two sides. The case practice from the Commission has for instance been applied on newspapers\(^{31}\), credit cards\(^{32}\) and software platforms\(^{33}\). They have though not reached a conclusion on the market(s) for online search engines.\(^{34}\)

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\(^{34}\) They have though discussed the market definition for online search engines in two merger cases; Commission Decision of 11 March 2008 in Case COMP/M.4731 – Google/DoubleClick and Commission Decision of 18 February 2010 in Case COMP/M.5727 – Microsoft/Yahoo! Search Business.
3. Google Inc.

This chapter provides basic knowledge about the company Google and a small selection of their variety of business. There is no intent to investigate all business areas that Google participate in, but to give a brief summary of the most relevant businesses for the reader to understand why Google is a part of the Network economy and the effects it has on applicable competition law. This chapter furthermore explains the current antitrust investigation carried out by the European Commission, with comparison to the completed US investigation based on the same question. The Commission’s investigation will recur and serve as a basis for the analysis on the different potential market definitions. Google’s core function and this thesis’s main focus area is the online search engine, which will be described in details in chapters 4 and 5.

3.1 About the company

Google.com is the most visited website globally.\(^35\) Google Inc. was founded in 1998 by Larry Page and Sergey Brin. The original idea was to provide a search engine better than the ones existing on the market. Larry Page once said that “The perfect search engine would understand exactly what you mean and give back exactly what you want”.\(^36\) After only two years, in June 2000, Google became the largest search engine in the world, measured by the amount of web pages indexed. At that point over 1 billion web pages were indexed. Later that year Google established AdWords, an advertising tool which easily allows the customers to buy advertising and target their advertisements to search keywords. In 2006 Google acquired YouTube, an online channel open for every Internet user to upload or watch videos. One year later Google’s e-mail service, Gmail, opened up for everyone (before that a special invitation was required).\(^37\) Throughout the years Google have been developing their search engine, launching new products and services and growing from a small two man-


Google is active in a large number of online and digital businesses. The number of products owned by Google is not publically announced by Google, they prefer to mention twelve business areas where they are active. A search on an anonymous search engine does though give a list of over a hundred products innovated or acquired by Google. Google went from private to public in August 2004 and in only six months’ time Google’s stock market value exceeded §50 billion, almost twice as much as at the day of initial public offering. In 2012, a decade and a half after the foundation of Google, the company’s revenue exceeded 50 billion dollars. That was 36 % more than the year before. The number of unique web pages Google have indexed now exceeds 1 trillion and the amount grows every day. It is safe to say that Google has faced a rapid growth since inception with substantially increased revenues and the company expect to see continuous growth for their business, according to Google’s latest SEC filing for the fourth quarter of 2013. Finance analytic Deloitte Touche Tohmatsu has appointed Google as the world’s fastest growing company, with a 400 000 % increase of the revenue during the first five years.

Google.com (where the search engine is to be found) is not only the most visited website globally, it has approximately 71 % of the global net market share for online search engines. Google’s global market shares have been around 83 % for some time, but their shares sank during the summer of 2013 in favour of

40 DuckDuckGo.com, Search engine result page for “google services”, available at: https://duckduckgo.com/?q=google+services (assessed 4 January 2014).
the Chinese search engine Baidu.\textsuperscript{46} Google does not share their statistics on search users anymore, but the latest known numbers shows approximately 20,000 searches per second or 50 billion searches per month.\textsuperscript{47} 

3.2 Google and Current Antitrust Investigations in EU

Following complaints from search service providers regarding Google’s potential abuse of dominant position the European Commission in November 2010 decided to open a formal investigation on the matter. The opening of this procedural step is legally based in Article 11(6) of Council Regulation No 1/2003 and Article 2(1) of Commission Regulation No 773/2004. The opening of formal proceedings does not imply that the Commission has proof of any infringement, but it states that the Commission will perform an in-depth investigation.\textsuperscript{48}

In the complaints a number of vertical search service\textsuperscript{49} providers claimed that their services was unfavourably treated as search results at Google.com, both as unpaid and as sponsored search results. Furthermore they complained about preferential placement for Google’s own services.\textsuperscript{50} The Commission therefore decided to investigate whether Google abuses a dominant market position with unfavourable ranking of unpaid search results for vertical search services and at the same time favour Google’s own vertical search services to shut out competition. The Commission also decided to investigate the assertion that Google applied unfavourable ranking for paid search results by lowering the quality score\textsuperscript{51} for sponsored links of competing vertical search services.\textsuperscript{52}


\textsuperscript{47} A. Ekström, \textit{Google-koden}, 2010, p. 43.


\textsuperscript{49} \textit{Vertical search service} = search services that focuses on a specific segment of online content and are specialist in that segment, for example search services for price comparison. Google.com is a universal and general search service provider. Various forms of online search will be discussed in chapter 4.


\textsuperscript{51} Further reading at Google Inc., \textit{Check and Understand Quality Score}, available at: https://support.google.com/adwords/answer/2454010?hl=en-uk (assessed 29 December 2013).
In April 2013 Google compiled a 61 pages document on their commitments to remedy the allegations regarding unfair search results. The Commission responded by sending out a request for input from interested third parties on the proposed commitments. This is the most recent public activity in the Commission’s investigation on Google. The invitation to send in comments was published 26 April 2013 and due date for such comments was one month later.

At the same time as inviting third parties to comment Google’s proposed commitments the Commission published questions and answers regarding the case, where they gave preliminary comments on Google’s potential abuse of dominance. The Commission here takes the preliminary view that Google is dominant in both web search and search advertising and that they can identify four possibly areas of abuse. The motivation for why Google should be seen as dominant is only four lines long, without any discussion regarding the definition of the relevant market. The Commission states that Google have held a market share for online search well above 90 percent in most European countries for several years. They also mention that there are significant barriers to entry and network effects in both the market for online search and the market for search advertising.

The four areas where the Commission have identified that Google possibly abuse their dominant position is in specialised (vertical) search, content usage, exclusivity agreements for online search advertising and contractual restrictions of online search advertising campaigns across AdWords and competing platforms.

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56 Ibid. Further reading regarding the abuses is to find in the Commission’s Q&A.
At the same time as the formal investigation was opened by the European Commission, Google faced an investigation based on similar claims by the same companies in the US. The Federal Trade Commission (FTC) in the US decided in January 2013 to close the part of the investigation regarding unfair ranking of search results. The other part of the investigation included Google’s acquisition of Motorola Mobility LLC. The four pages long statement from FTC regarding closing the investigation did however not rely on the definition of relevant market or dominance, instead the commission was content to say that the conduct was a legitimate business decision and that there was no reason not to trust Google in doing these changes in the algorithm to improve quality of their search results. The investigation was based on the commission’s review of over nine million pages of documents from Google and other relevant parties as well as interviews and investigational hearings. The FTC concludes that their key issue was to determine Google’s primary reason to change the search algorithms, whether it was to exclude actual or potential competitors or to improve the quality of the product. The FTC investigation showed that the latter was the primary reason for Google, which allows them to give quicker answers and to satisfy users by providing them directly with, what Google finds’ is, the most relevant information. The possible losses for potential competitors should be seen, according to FTC, as a common side effect of competition on the merits and thereby something that the law encourages.

The European Commission have raised the question on why it seems like the Commission will reach a different conclusion than what FTC decided in early 2013. They point towards the market shares of Google in Europe respectively in the USA. In Europe Google holds well above 90 percent of the market shares for online search and has done so for several years. In the USA Google face competition from both Yahoo and Bing, where the two together holds

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57 FTC and Google reached an agreement regarding some modifications in connection with the acquisition of Motorola Mobility in July 2013. This part of the investigation will not be further discussed in the thesis. Read more about the agreement at Federal Trade Commission, Motorola Mobility LLC, and Google Inc., In the Matter of, available at: http://www.ftc.gov/os/caselist/1210120/index.shtm (assessed 12 December 2013).

about 30 percent of the market. Due to the commercial importance of Google’s (vertical) search services and the method Google promotes its search results has therefore, according to the Commission, a much more significant impact on users and on competition in Europe than it has in the USA.59

4. Online Search

Users see the online search engine as a tool for easily finding the information they are searching for, whatever that may be. They type a query in the search field and in less than a second they are provided a ranked list of relevant web pages, i.e. the search result. A satisfied user is attained when the search result is presented without cost, quickly and with the most relevant results for that specific user. For the search engine provider the search system is a complex index of information, ruled by specific algorithms. Excellent engineers and constant innovation is required to get users to come back to the search engine over and over again. At the same time shall this system for online search be profitable for the company providing the search engine, without any cost for the search users. The financing is maintained by advertisers able to purchase advertisements tied to keywords. This complex system of online search and online advertising constitutes a two-sided business. The question is though if these two sides can be seen as two separate markets in the context of competition law. This chapter explains and analyses the first part of the two-sided business, online search.

4.1 The History of Online Search

Online search has evolved since the beginning of the 1990s, with AOL, Yahoo and AltaVista as examples of early search engines. Google entered the market in 1998. At that time Yahoo was the most used search engine and it relied on being a portal to the Internet, the first place for Internet users to visit online. Yahoo offered a wide variety of products and services, such as e-mail, games, news, sports, weathers and so on. At the time being the conventional wisdom was that online search engines only was a small part of a big portal and for Yahoo only one out of three users came to Yahoo to use the search engine.60

Online search according to Yahoo at this time involved two steps, where the second one only started if the first step ended up with no result. The first stage of online search meant that Yahoo searched through the subject categories for the web catalogue that human beings at Yahoo had compiled. This first step was dependent on human editors and their categorisation of the Internet. If no

60 R. Stross, Planet Google: How One Company is Transforming Our Lives, 2008, pp. 67-68
search result appeared in this first stage, the second stage started. Yahoo then sent out the request to a sub-contractor, which extended the search to all the web pages that sub-contractor had collected and indexed. This second stage was considered arid by almost everyone and the opinion was that this service could be delivered by almost anyone without distinction. In 2000 Google became such a sub-contractor providing the second stage of online search to Yahoo. Google, unlike Yahoo, appreciated the importance of the second stage search and in only two years Google had grown bigger than Yahoo in worldwide search referrals thanks to Google’s ability to attract customers to their own web site Google.com, where they could provide better search results with another approach to search algorithms. It took two more years, until 2004, before Yahoo realised this and replaced Google as their sub-contractor for the second stage.61

There were two main differences between Yahoo’s and Google’s approaches that could explain the uneven development. Firstly, Yahoo believed in human intervention in the search algorithm, where Google at an early stage understood that the amount of information they strived to collect, more or less the entire online web, would by far exceed what human editors could manage. Google believed in humans developing the software algorithm, but the end product must be done by an automated process. The search results done by the algorithm should not be touched at all by human intervention.62 Google used the co-operation with Yahoo to collect raw material for their search engine algorithm. Raw material for Google was, and still is, information on a large quantity of search queries, allowing them to process the information into qualitative search results. Google believes that the more information input the greater quality of the search result output. Secondly, Yahoo relied on the search engine constituting only a minor part of an online portal, where Google saw the rising demand for qualitative online search. Google therefore continued to develop their search algorithm, in accordance with the raw material they were able to collect from the services they provided to Yahoo, and by time the search users

62 At the beginning the founders of Google believed in a wholly automated process, but today some human intervention is allowed to improve the quality. Manually adjustments can be done for instance to remove spam and to divide the SERP into different results if the same keyword is prominent for more than one topic.
realised that Google could deliver more satisfying results than Yahoo. So, Google’s trust in automated information processing together with their trust in online search per se was their winning concept as an online search engine.63

Ever since general online search was developed this has been a service free of charge for the customers64, i.e. the users of the search engines. To some extent vertical search engines use membership or licensing to cover the costs, but Google, among many others, provides free online search. At the start-up of Google the founders and the investor Bectolsheim discussed how to make it profitable. Advertisements were problematic according to the founders, Page and Brin, since they feared corrupted search results. They suggested a system where they could sell user licences. Bectolsheim on the other hand imagined online search as the Yellow pages gone online, where contact information to companies are mixed with clearly marked advertisements. The investor had the final saying on how to make Google profitable.65

4.2 Online Search Technology

Early search engine algorithms, such as those used by Yahoo in the first stage of online search, functioned by crawling the web and listing web pages according to their frequency usage or keyword density of the words from the user’s query. The web page where the word(s) were most frequent mentioned became number one at the search into a SERP. The web page with second most mentions was ranked second and so on. The early algorithms were easy to manipulate by repeating the same keywords at your web page, to achieve a higher ranking at the SERP. When Google entered the world of online search they improved the algorithm that control the transformation from a user’s query into the most relevant SERP. Google created what they call the PageRank algorithm. What PageRank did that previous search engine algorithms did not do was that it took into account data on external links to a page as an indicator for page quality and relevance. External links are hyperlinks from web pages to another web page. The PageRank algorithm allowed Google to provide SERPs where more external links to a page gave a higher page quality. Larry Page and

64 One of the first general online search engines tried to charge the users for search, though, this business model failed commercial.
Sergey Brin, the founders of Google, think that the amount of external links is a benchmark for the importance of the web page. This relies on the assumption that human beings posts links to relevant content and that the more humans posting links to a specific web page, the more likely that another user will find the same web page relevant. Google combined web pages’ frequency usage of the sought word with external links to the pages, aiming at relevant search results at the same time as ranking the quality of the web pages. When combining these two algorithms Google satisfied more customers, who found the new SERP more relevant than previous SERP. The algorithm that rule Google’s SERPs today are even more sophisticated and complex, and only the engineers at Google knows exactly how they are functioning. Known is that Google, since the beginning, have relied on the importance of information. Therefore they have embedded into the algorithm information about as much as possible, i.e. information on how far away from each other keywords are presented on web pages, the font size used, if the letters are capitalised or not and also if external links pointing to a specific web page comes from a page with great influence or not.

During 2009 Google introduced an improvement of PageRank when they started to collect personal information on the logged in search user. The collected information is used to individualise the SERPs, so that each search user get even more relevant and personalised search results.

Online search can be divided into vertical search, universal search and general search. Vertical search is a thematic search engine specialised in a delimited subject. Examples of vertical search engines would be search sites for price comparisons, travel, shopping or weather. Google has vertical search engines, such as Google Scholar (search for scholarly literature), Google Shopping (product search and price comparisons) and Google Images (search for images

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Note: Salinger and Levinson were consultants for Google during the FTC’s investigation and the paper was financed by Google.


69 In the merger case between Microsoft and Yahoo (Commission Decision of 18 February 2010 in Case COMP/M.5727 – Microsoft/Yahoo! Search Business) the Commission did however notice only two distinct markets: vertical and general search.
The vertical search engine often uses a “web crawler” that only crawls through web pages relevant to the pre-defined topic. A universal search result consists of links to the vertical (thematically) sites. An example of a universal search is to write the query “the Swedish king” and amongst the top results a link to images of the Swedish king to be found at Google Images shows up. It means that a universal search result consists of links to the search result that would appear if you had done your search on the vertical search site, based on the algorithm used for that vertical search. A general search engine on the other hand is capable of answering all conceivable user queries thanks to the index covering (almost) the entire web. The web crawler for a general search engine crawls a large part of the World Wide Web, not limited by a pre-defined topic. When it comes to Google their online search consists of a general search engine, which can answer general queries as well as providing universal search results with links to the vertical search engines also being part of the Google industry.

A distinction must also be done between online search engines and searches online at one particular web site. The latter form of search is often provided by online search engines as a stand-alone product, but the search algorithm is not that sophisticated as the search engines’ and the searches are limited to the content of only one web page.

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74 Ibid, paragraph 32.
4.3 The Relevant Market for Online Search

The Commission seem to handle online search as a separate market in the preliminary questions and answers regarding the current Google investigation.\(^75\) The question about a separate market for online search has earlier been left unanswered by the Commission in the merger between Microsoft and Yahoo.

A question has been raised during the investigation as to whether a separate market for internet search, i.e. the provision of search results to internet users, could be defined. [...] Moreover, even if such a separate market could be defined, the market would still have to be investigated because forms of user searches that do not require a search engine (for example online directories or even offline search formats) may also belong to the same product market.\(^76\)

As the Commission recognises in the quotation from the Microsoft/Yahoo merger case, online search via online search engines may or may not belong to the same product market as other forms of user searches. It is feasible to investigate for instance offline search, vertical search engines, general search engines, universal search engines and search on a specific web page when defining the product market for (online) search. Other forms of activities similar to online search can obviously also be discussed.

The Commission Notice on the definition of the relevant market explains the basic principles for market definition (product and geographic market) and they identify three main sources of competitive constraints: demand substitutability, supply substitutability and potential competition.\(^77\)

A product market investigation according to Article 102 TFEU aims amongst others to define the products substitutability according to customers. A proper investigation of the relevant product market should take into account all relevant aspects of the market, but the Commission’s practice and case law tells that the investigation shall focus on price, product characteristics and intended

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use. The underlying economic theory is that an undertaking cannot have significant impact on the sale conditions, such as pricing, if their customers are able to easily switch to a substitutable product.

The investigation regarding price is normally done by performing a fictitious test. The test is called SSNIP test and relies on the question whether a small but significant (5-10 percent) and non-transitory increase in price would cause customers to purchase sufficiently more of a substitutable product. If the result of a SSNIP test is that consumers would purchase sufficiently more of a substitutable product due to the price increase, this substitutable product shall be seen as part of the same product market. If the result is the opposite, namely that consumers would continue to purchase the product regardless of the price increase, it is likely that the product constitutes a separate and thus a narrow product market. The Commission’s Notice on market definition adopts the SSNIP test.

In the Network economy it is not rare to have large fixed costs and a unit cost close to zero. This cost structure applies for online search. The innovation of search algorithms and the hardware required are large investments, why the fixed costs at start-up are high for online search engines. Online search engines are though free of charge for the search users and the cost per produced unit, i.e. each SERP, is thus zero. This cost structure leads to inapplicability of the SSNIP test. When the unit cost is zero a price increase by 5-10 percent gives a price still at zero and the consumers will not have any incitement to substitute the product. It is thus not possible to establish demand substitutability for online search engines via the quantitative SSNIP test.

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80 Ibid, paragraph 15.
81 Further reading on the financing of online search in chapter 5.
Although, consumers can consider similar products or services as substitutes to online search via an online search engine, due to their characteristics or their intended use. The allegedly dominant undertaking is interested in an as wide market definition as possible, since a wide market will decrease the market power of the firm. It is thus possible that the undertaking argues that online and offline search are substitutable and shall be part of the same product market. An investigation regarding online respective offline search’s characteristics and intended use will most likely result in the finding of them as part of separate markets. Online search relies on availability, constant innovation, rapid search results, a great amount of data and advanced algorithms ruling the relevance of the search results. Offline search can hardly compete on these merits.

Search appears in various forms online and the different forms may or may not belong to the same relevant market as Google’s search engine. The various forms of online search has thus to be analysed, according to Article 102, based on the characteristics, the intended use and potential competitors to reveal whether or not they are substitutes to the general search engine provided at Google.com.

Besides Google the European market has in essence only two other general search providers; Yahoo and Bing. These three general search engines are similar, both in characteristics and in intended use. They are ruled by advanced search algorithms, available free of charge for every Internet user via a browser, they aim at providing the most relevant SERP for each query in the format of a list of links to relevant web pages and they provide results to a wide diversity of queries. In addition, they are all two-sided businesses and financed by targeted advertising. The intended use of the general search engine is to find results matching the users search query, not specified to a certain topic. It is likely that all general search engines constitute a product market, where Google is the largest player.83

Online search can also appear as vertical search engines. Most vertical search engines are similar to the general search engines when it comes to availability,

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speed, format and functions. The intended use do though differ somewhat. The vertical search engine aim at providing relevant results for a predefined topic, by indexing (crawling) a limited area of the web pages available on Internet. Examples are search engines limited to travels. The search user of a vertical search engine has thus no intention of searching for results outside the predefined topic, e.g. the search user eager to find a book store will not use a vertical search engine specialised in traveling. A general search engine on the other side strives to index all web pages, in order to be able to give results to any query. The question is though if this difference in intended use is enough to separate the markets for the two forms of online search from each other. If vertical search is considered part of the same market, i.e. a substitute to general search, Google faces competition from several other corporations.\textsuperscript{84}

The Commission have, in their preliminary answers regarding the investigation of Google’s allegedly abuse of dominance, declared that Google is dominant in both online search and online advertising. The Commission did though not discuss this further and nor did they mention if they considered vertical and general search as part of the same relevant market. The Commission’s wording implies that they do consider vertical search engines as competitors and thus part of the same product market. This conclusion is further reinforced since the investigation was initiated by vertical search engines and the allegedly abuse concerns Google’s ranking of search results originating from vertical search engines other than their own.\textsuperscript{85}

Another form of online search is web page search, where the search user is able to search on any word but the search result is limited to that specific web page. Information search can also be carried out on social media web pages, where the Internet user can ask a question to his or hers friends and followers. To some extent this kind of online search competes with Google on the market for providing information and answering questions. The reason why Internet users might prefer to ask the question on a social media could be to get personalised

\textsuperscript{84} For a discussion regarding vertical search, see Commission Decision of 18 February 2010 in Case COMP/M.5727 – Microsoft/Yahoo! Search Business.

and therefore more relevant results. Google must thus compete regarding the
creation of the most useful search results for each search user with all other
web pages that answers questions and provides information. This leads to the
question whether Google is active in the online search market or in the broader
online information market (or something similar). Is search so distinct that an
online search market makes sense? Users search for information online at vari-
ous kinds of web pages, and they do find the information they require. Geoffrey A. Manne suggests that “online information” could constitute a market,
wider than only online search. He means that users come to Google to search
for information, but Internet users also search for information from other
sources; informational sites (e.g. Wikipedia and Encyclopedia Brittanica), re-
tail sites (e.g. Amazon and Ebay) and social media (e.g. Facebook and Twitter)
to name a few examples.

It is important to realise that the dynamic of the business behind a search en-
gine is far more complex than what a first glance can tell. Colloquially market
shares held by Google almost always refer to Google’s market share in search.
The Commission stated, for instance, that Google have held well above 90 per-
cent of the market for web search for several years. This number shall be read
only as the share of online search performed on the different search engines
and not as a number on Google’s factual market share in the market where the
actual business take place: online advertising, or in the combination of these
two business on a two-sided market. The focus might be better shifted from
drawing a parallel between market shares and market power and allowing it to

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86 This view is supported by Salinger and Levinson. Further reading in M.A. Salinger and R.J. Levinson, The Role for Economic Analysis in the FTC’s Google Investigation, 2013, available at:
87 Geoffrey A. Manne is the Executive Director of the International Center for Law & Economics (ICLE) and a lecturer in Law at Lewis & Clark Law School in Portland, Oregon. Note: the
funding of ICLE comes from a numerous of corporations, organisations and individuals. Google is one of them.
http://laweconcenter.org/component/content/article/94-the-market-realities-that-undermine-the- antitrust-case-against-google-.html (assessed 22 September 2013).
89 European Commission, Commission seeks feedback on commitments offered by Google to address competition concerns – questions and answers, 25 April 2013, available at:
function as an indicative instrument. A high market share in online search can of course indicate a high market share for online advertising as well, but the market realities make it more complex. The market for online advertising will be discussed in the next section, chapter 5. Another aspect regarding market shares is that the data regarding Google’s market shares in search does only take into account general search engines (primarily Yahoo and Bing). Searches on vertical search engines are not included, even though one search on a vertical search engine also could be seen as one search less on Google.

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5. Online Advertising

The financing for most search engine providers are done by linking advertising to the search engine, which Google do. This means that online search is a so-called two-sided business, with one side of the business consisting of search and one side of advertising with the two sides tightly linked together. The previous chapter was on online search, this chapter is on the other side of the business, namely online advertising. The next chapter will analyse them in relation to each other.

5.1 AdWords, AdSense and the Ad Auction

Google uses two tools for advertisements, AdWords and AdSense. AdWords is the tool used for publishing proper advertising at the SERP. The advertisements shows up together with the search result, but marked as “sponsored links” and often separated from organic search results by the background colour. The advertisers can buy keywords and when a search user types in that keyword in the search field the advertiser’s advertisement will be shown at the space allocated, a higher ranking amongst the organic results is not possible to buy. The advertisements purchased through AdWords and shown at the SERP are so-called search advertising. All advertisements are activated by keywords and they are presented only in text, no graphical advertisement is allowed. AdWords annually represents somewhere around 60-70 per cent of Google’s revenues. AdSense is the second of Google’s two advertising tools. AdSense allows web page owners to include advertisements on their pages, enabling them to earn some money. It is an easy-to-use tool made for all sizes of web pages. The content of the advertisements reflects the web page it is shown at. A web page about flowers will therefore have advertisements relating to flowers, to attract the right customers to the advertiser at present. AdSense brings about 30 per cent of Google’s revenues. AdWords and AdSense represent together almost all of Google’s income.92

The advertisers can purchase advertisement space via an auction process, named by Google as the “Ad Auction”. There is no fixed price for an advertisement, instead the interested advertisers can bid on keywords. The one offer- 

92 A. Ekström, Google-koden, 2010, pp. 64-68.
ing the highest bid gets the advertisement space for that keyword. Advertisers offer a bid related to price per click (CPC), not per view. This means that the advertisers only pay for the exact amount of clicks that have been carried out by search users. They can also limit the costs by establishing a price ceiling, when the ceiling is reached their advertisement automatically is removed from the SERP for the keyword at hand. An advertiser can therefore win the auction with a bid of 10 cents per click and with a price ceiling at 100 dollar. Then their advertisement will be removed when 1000 search users have clicked on it. This system is free from economically risks for the advertising companies and they can easily measure the effect from advertising via Google. Google does not maximise profit on their advertisement tools. The price per advertisement is not set to what the highest bidder is willing to pay, instead it is set to one cent above the second highest bid. The business idea is not to answer the question on how to earn as much money as possible, instead Google asks how they can take as little charge as possible. For Google the revenue from advertisements lies in the great volume from millions of sources.93 Furthermore, Google have an advanced algorithm that adjust the placement of the advertisements bought, based on the relevance of the advertiser’s link’s to the search query and the quality of the web page that the link is directed to. The quality score94 for the webpage may also adjust the price for the advertiser, the higher quality score for the web page the lower cost for advertising.95

5.2 The Relevant Market for Online Advertising

Targeted online advertising is the method by which online search is made profitable. First and foremost Google sells advertising, not search results. Without online advertising tied to online search no one would give away advanced search results for free to customers. The search engine is a platform where

93 A. Ekström, Google-koden, 2010, pp. 64-68.
94 Quality score is Google’s method of estimating the relevance of advertisements, web pages and keywords viewed from the search user’s perspective aiming at great user experiences. A high quality score indicates that Google have found the advertisement, web page and keyword relevant and useful. Thus a higher ranking in the SERP will be provided, both for sponsored links and organic results. Further reading at Google Inc., Check and Understand Quality Score, available at: https://support.google.com/adwords/answer/2454010?hl=en-uk (assessed 29 December 2013).
Google, and other search engines, have found it possible to maximise the revenue from online advertising. If Google or any other firm found a more profitable and sustainable way to sell advertising than today’s matching between the search user and the advertiser it is not unlikely that they switch platform to the new and more profitable. The relevant market for online search engines must therefore necessarily contain an analysis of online advertising. Online search is still relevant, but of secondary importance for the market definition.\(^96\)

### 5.2.1 The Commission’s Proposed Market Definitions

Advertising can appear in a number of ways and it is possible that not all various forms of advertising can or shall constitute a coherent market. The Commission have theorised the concept of online advertising mainly in two merger cases of interest, *Google/DoubleClick*\(^97\) in 2008 and *Microsoft/Yahoo!*\(^98\) in 2010. The commission however concludes that it is not necessary to define the exact product market in neither case, since the proposed mergers not would raise any serious doubts in the EEA under any alternative market definition.\(^99\) The proposed distinction is though interesting as it is possible that the commission will take a similar position regarding the investigation of Google’s potential abusive conduct according to Article 102 TFEU. As for today we still have the same online advertising methods as were the situation when the two merger cases were dealt with. The question that remains is then how and if to separate these identified online advertising forms from each other when it comes to the product market definition.

### 5.2.1.1 Offline and Online Search

First and foremost a distinction has to be made between offline and online advertising markets. The notifying party in a merger case or the alleged dominant undertaking are interested in a broad market definition, since their market power will be seen as less in the market investigation. If offline and online advertising were part of the same market an undertaking only present online would


\(^99\) Ibid, paragraph 75.
have limited power. The Commission have, however, established that offline and online advertising constitutes two distinct markets. This view was maintained by the Commission in both Google/DoubleClick and Microsoft/Yahoo and has also been expressed in cases prior to the two mentioned. The notifying party in Google/DoubleClick suggested that offline and online advertising was substitutable, due to the raise of online advertising on the expense of offline advertising such as for TV, newspapers, etcetera. Furthermore they argued that traditional media publishers offer both offline and online advertising, which would justify such an extensive definition of the market. The Commission did reject the notifying party’s argumentation in this part, due to the differences between offline and online advertising that the market investigation revealed. Online advertising has the advantage of targeting the audience for the advertising, where they can combine information on geographical location, time of day, personal interests, purchasing records and search preferences. Great differences were also to be seen in the reporting system and in the pricing mechanism, where online advertising is capable of measuring the exact amount of users that have been exposed for the advertisement and advertisers can price after the numbers of users who effectively have established a contact with the advertisement. Offline advertising lacks these special opportunities of targeted advertising, a precise reporting system and a pricing mechanism with as low abundance costs as possible.

Manne and Wright argue that there are substantial reasons to doubt the correctness in a narrow market definition excluding offline advertising and in any event online advertising should not be differentiated. They also argue that even when the purpose for advertising may differ it is not a question of different markets, thus merely a difference in degree and the question to ask would thus be if the differences are so substantial that a decision or pricing in one market does not affect the decisions on other market(s) for online advertising. They recognise that some advertisers suggest that offline and online advertising are not competing, while other advertisers suggest the opposite. Manne and Wright

refer a survey where 200 online retailers where asked whether search, display and contextual advertisements are substitutes or not. Among other things the survey showed that 85 percent of the asked online retailers found search and graphic advertisements as substitutes.\textsuperscript{102} It could however be argued that the different forms of online advertising are not interchangeable. Search advertising in the format as sponsored links at Google’s SERP appear in text and are paid according to Cost per Click (CPC), this indicates that advertisers use this kind of online advertising to receive Internet users to visit their web page for instance to buy something. Other formats of online advertising strive to achieve brand recognition, for example by the presence of a non-search advertisement in the formats graphical or rich media. Examples of this could be graphical advertisements at social media web pages, where you can receive a long exposure to the Internet users. The market investigation in the merger case between Microsoft and Yahoo does though indicate that online advertising is likely to be found as one product market.\textsuperscript{103}

\textbf{5.2.1.2 Various Forms of Online Advertising}

Online advertising markets can be characterised in a number of ways and therefore categorised in different ways. The Commission have, in Google/DoubleClick, divided online advertising into three different categories. According to (1) the selection mechanism on how the advertisement is selected to appear on the user’s screen, (2) the format of the advertisement (text, graphical or rich media), and (3) the distribution channel (direct or intermediation).\textsuperscript{104} The third category, distribution channel, is not relevant for the thesis and will thus not be further explored here.\textsuperscript{105}

Due to the selection mechanism three different categories of advertisement appear: search advertising, non-search advertising and classified advertising. These selection mechanisms have specific targeting features. Search advertis-


\textsuperscript{103} Commission Decision of 18 February 2010 in Case COMP/M.5727 – Microsoft/Yahoo! Search Business, paragraph 71.


\textsuperscript{105} Ibid, paragraphs 10-14.
ing is the most common mechanism for online search engines since the advertisement is selected based on keywords and activated by search queries of the users. The search advertisement appears at the SERP, next to the organic results and they are often in textual form with a hyperlink. The targeting for search advertisements is due to the search user’s self-revealed interests when typing a query in the search field. Google call search advertisements “sponsored links”. Non-search advertising can appear at any web page and can be either contextual or non-contextual. A contextual advertisement is selected in relation to the content of the web page. Non-search advertising can appear in different forms, text, graphic or rich media (i.e. motion picture). The targeting for non-search advertising is less precise than the search advertising targeting, due to the non-search advertising targeting’s limited possibility to reveal personal information. Non-search advertising can only guess upon their consumers according to the content of the web page (only for contextual advertisements) and/or geographical data thanks to the used computer’s IP address. Classified advertising, the third category based on the selection mechanism, is selected based on the classification of the product or service offered at a web page. The classified advertisement appears at specific web pages under suitable headlines, such as houses for sale in a specific neighbourhood or a car model for sale. The Commission recognises that search advertising have advantages over the two other categories according to selection mechanisms. The at that time up and coming use of sophisticated online behavioural targeting (web surfing behaviour) was predicted to lessen the gap between search and non-search advertising in terms of effectiveness.106

An alternative to categorising based on the selection mechanism would be to categorise due to the form used for the advertising. A distinction based on form leads to text advertisement and graphical advertisement. Text advertisements consist of plain text and often a hyperlink to the advertiser’s web page. Graphical advertisements can, beyond text, consist of images, motion picture etcet-

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era. As already mentioned text advertisement is mostly used for search advertising and graphical advertising for non-search and classified advertising.\textsuperscript{107}

The market investigation in \textit{Microsoft/Yahoo} did not give a coherent picture of the market for online advertising. A majority of the respondents thought that all online advertising, no matter of category, compete with each other, since advertisers blend different formats and technologies. Reasoning for this would be that search advertising is able to directly target the search users’ expressed intent. The respondents recognised that the recent years (before 2010) had shown a conformity between non-search and search advertising and that a distinction is increasingly blurred in practice. The likely reasoning for this would be the increased use of behavioural targeting and that all the main players offer all forms of online advertising. The Commission concluded that the exact market definition was not necessary to define in the case. Consequently, there is still uncertainty regarding the product market for online advertising.\textsuperscript{108}

5.2.1.3 Pricing Mechanisms for Online Advertising

The Commission recognises two main pricing mechanisms for online advertising, “cost per click” (CPC) and “cost per thousand impressions” (CPM). CPC means that the advertiser only pays the publisher when users click on the advertisement. This pricing mechanism is mostly used for text advertisements (either search advertising or contextual advertising) and relay on the direct response from the user. CPM is used mainly for graphical advertisements and the advertiser pays when the advertisement has been displayed to a fixed number of users.\textsuperscript{109}

5.2.2 The Problem with the SSNIP Test

The SSNIP test is almost always used in Article 102 cases, in order to determine demand substitutability based on price. The SSNIP test is not only inapplicable for the market definition on online search, but also inapplicable when

\textsuperscript{108} Commission Decision of 18 February 2010 in Case COMP/M.5727 – Microsoft/Yahoo! Search Business, paragraphs 71-75.
it comes to online advertising based on the pricing mechanism chosen by Google.

To apply the SSNIP test you would need to have a price to start from, in order to increase it by 5-10 percent. Google’s auction process (Ad Auction) though makes the price vary from time to time, and it is not possible to say at what price Google sell their advertising place. However, it might be possible to find a common price by analysing a great amount of previous purchased keywords. This is nevertheless not the same as the price for the product, since the price will vary according to factors such as trends in online search, the number of advertisers participating in the auction process and the interest in Google as both an advertising platform and a search engine.\footnote{For a similar reasoning see M.A. Salinger and R.J. Levinson, \textit{The Role for Economic Analysis in the FTC’s Google Investigation}, 2013, p. 23, 32-34, available at: http://www.law.northwestern.edu/faculty/programs/searlecenter/events/internet/documents/Salinger_Economics_of_Google_and_Antitrust_Case_Searle_conference_version.pdf (assessed 27 November 2013).}

According to Manne and Wright\footnote{Geoffrey A. Manne is the executive director for International Center for Law and Economics (ICLE) as well as lecturer in law at Lewis & Clark Law School. Joshua D. Wright is associate professor at George Mason University School of Law and Department of Economics, as well as director of research at ICLE. Note that ICLE previously has received support from Google, amongst several other financiers.}, if the SSNIP test were to be used for Google’s online advertising it should furthermore be applied for each and every single keyword, since these constitute different products with separate auctions to purchase advertisement space, uneven attractiveness and therefore generates various prices. The substitution between different keywords is almost non-existing. If Google were to increase the price of one keyword phrase (the product), for example “Asian food”, the firms interested in purchasing a sponsored link for this keyword would most likely not switch into purchasing another keyword phrase (product).\footnote{This view is supported by Manne and Wright. Further reading at G.A. Manne and J.D. Wright, \textit{Google and the Limits of Antitrust: The Case Against the Antitrust Case Against Google}, 2010, available at: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1577556 (assessed 4 November 2013).} The SSNIP test is therefore hardly useful due to the enormous amount of keywords that are searchable. It therefore seems that the SSNIP test is an inapplicable method for the finding of demand substitution according to price for online advertising as well as for online search. If the SSNIP test were to be used to determine demand substitution in
the Commission’s current antitrust investigation, they would have to apply the test for every keyword of interest for the vertical search engines claiming Google abuse the ranking system unfavourably.

5.2.3 Potential Competition in Targeted Advertising

Consumer behaviour is also an important factor to take into account. Consumers might go straight to the web page of interest and leaving Google without power in online advertising for that kind of web pages. An example could be online booksellers, Google would not have much market power regarding online book advertising if the consumers go straight to the online booksellers.\(^{113}\)

When looking into the product market definition, it is, amongst other things, demand substitutability that matters. In this case the demand comes from advertisers and advertisers are interested in finding the most successful advertising platform. Here successful means as many clicks as possible, which increases the chance of purchase. The advertisers’ demand is not based on what the platform looks like, but how successful it is. This means that advertisers, most likely, do not care where their customers find the advertisement that led them to their web page. This could be interpreted as Google competing in the market for targeted advertising. In the context of this market definition, social media have the advantage of their customers staying at their web page for a longer time than a search user, why advertising on a vertical search engine, social media web page, online retailer or similar might be more attractive for advertisers. Social media pages collect user data, similar to what Google does, but with the advantage of being able to collect user information like status updates, friends, interests etcetera. Further, online stores may collect information about their users, such as what kind of products they are interested in, products they usually buy.\(^{114}\)

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In addition, advertisers might find it more interesting to spend their advertising budget on a vertical search engine where the customer is even more inclined to purchase their product. A vertical search user is already interested in the limited topic, why advertisements related to this topic might generate more clicks and followed purchases than a general search user. Manne and Wright takes this as far as to potentially predict a future where vertical search engines are the most valuable with high-value traffic and high advertising click rates, and with Google and other general search engines left over with primarily non-targeted low-value traffic.\(^\text{115}\)

### 5.2.4 Google Competing With Google?

Not only do Google potentially face competition from all other online sites with advertisement (and perhaps offline), the greatest competitive constraints might come from their own organic search results appearing at the same SERP as the sponsored links. Manne and Wright argue that each SERP could be seen as a separate market, since each SERP represents a specific search query and the keywords used. The organic search results compete with the sponsored links about user click and consumer attention. If the organic search result is relevant enough it is possible that the search user never will click on the sponsored link. Furthermore, links to the advertisers’ web pages can be high ranked in the organic list due to the quality score without any cost\(^\text{116}\) and the incitement to purchase a sponsored link would then lessen. The economically interested advertiser would probably prefer a high ranking in organic result for free, than to pay to be present amongst the sponsored links. Thus the relevant product market could be the market for every SERP, including both organic and sponsored search results.\(^\text{117}\)

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\(^{116}\) It is though common with “Search Engine Optimisation” (SEO), which normally require investment in time and money for the firms.

\(^{117}\) Ibid, pp. 29-30.
6. Online Search and Online Advertising - a Two-Sided Market

Is competition just a click away? as Eric Schmidt, Google’s former CEO (and today executive chairman) stated in 2009 at a hearing before the US Senate Judiciary Committee.\(^\text{118}\) This chapter will analyse the market definition for search engines such as Google’s, combining the EU competition law with the economics and technologies that Google are built on. The proposed alternatives of market definitions in chapter 4 and 5 might not be suitable for the two-sided business that Google’s search engine actually is. A market definition including both sides is perhaps the only way to truly reflect the market realities, why this will be explored in this chapter.

6.1 The Role of User Data and Network Effects

Network effects between the two customer groups are common in two-sided businesses. Network effects are when the consumption of one product in the network increases the value of another product in the network, which in turn can create even greater value to the original product. The indirect network effects for Google are not price-based, but based on “experience effects”. According to ICOMP Google uses these network effects on experience to lock in users to their platform. Google’s high volume of search users allows Google to a great amount of user data. For each search query Google collects information on for instance user’s habits, taste, geographic location and also spelling corrections. This user data is then transformed into even more useful and better search results, by implementing the information into the search algorithm. The improved search results attract even more Internet users to turn to Google for online search queries. The increased number of search users promotes Google’s search advertising business, since advertisers benefit from a high volume of users that increase the chances of users clicking on their advertisement. This means that as long as Google collect user data and use it to improve the search results, their customers will come back over and over again. This creates a positive feedback loop that enables Google to gain scale, at loss for Google’s competitors. A corresponding, but opposite, feedback loop can be

seen at Google’s competitors. The fewer search users they have, the fewer advertisers they will attract, which will cause decreasing revenues.\(^\text{119}\)

ICOMP states that the positive feedback loop for Google in addition with their manipulation of the SERPs regarding competitor’s vertical search results leads to the impression for search users and advertisers that there exists no alternatives to Google. Thus Google’s often repeated claim that “competition is just a click away” would be false. ICOMP continues by pointing out that one should not focus on what consumers can do, instead focus should lie in the acceptance of the fact that Google’s many users today clearly do not recognise the existence of competition to Google.\(^\text{120}\)

Manne and Wright argue that the network effects are not as great for Google and online search engines. It is though correct that the advertisers benefit from increasing search users, but the effect is then internalised in the platform. The search users do not benefit from these network effects, they care little or nothing about the number of advertisers. Furthermore the advertisers are not interested in a general increase of the amount of search users. Search can be both for information purposes and for purchase purposes. The advertisers are only interested in a high number of search users willing to purchase a product, they do not care if the amount of information search users rise. Advertisers thus benefit from network effects only when the increase in search users happens amongst search users interested in purchasing a product or service.\(^\text{121}\)

This indicates that a market definition for online search engines might not follows the same path as for other two-sided businesses. Online search is still a two-sided business by all means, but the feedback effects between the customers seem to be unilateral. Due to the situation of only advertisers benefitting from feedback effects it might be appropriate to handle the advertisers’ side of the platform as the main business area and the search users’ side as a complementary method for the business idea to be sustainable. This means that market


\(^{120}\) Ibid, p. 32.

power might have to be considered mainly on the advertisers’ side and that competition threats appears for online advertising. On the other hand, if not considering the search users’ side of the platform one oversights the relevance of the search users for advertisers to continue advertise on the platform of online search engines.

The awareness about and resistance against revealing personal data online is growing amongst Internet users, which has given rise to a number of search engines providing anonymous search (where no cookies or search history is collected). DuckDuckGo is one of the leading anonymous search engines, with about 4 million searches per day globally. That is though only 0.5 percent of the world-wide market for online search. It is possible that Google will face real competition from DuckDuckGo and other anonymous search engines in the future, if the question about personal data continues to grow and if Google does not change their usage of personal data.122

6.2 The Relevant Market for the Two-Sided Search Engine Business in the Network Economy

The Commission recognised in Microsoft/Yahoo that search engines operate in a two-sided platform, where the demands on both sides are interdependent. The discussion did though follow a separation of the two markets, online search and online advertising.123

A satisfactory model of Google’s online search engine business, according to Salinger and Levinson, would recognise that Google’s online advertising revenues are a function of the number of search users and also that the number of search users are a function of the quality of Google’s search results in relation to alternatives’ results. This captures the peculiar features that characterise a two-sided market. As a two-sided business Google most likely make trade-offs between search user optimisation and advertiser utility.124

For Google Inc. (not only the search engine) advertising represent approximately 97 percent of the revenue, so there cannot be any doubt that advertisements are fundamental for the search engine to exist. Even though the cost per unit is zero (in so far as one search query is seen as one unit), search engines have substantial expenditures for the hardware, such as servers, required to manage the enormous information index required as well as for research and development for the improvement of the algorithm. Competition in the Network economy relies on continuous improvements, if you lack behind you are lost. The income from advertisers is fundamental for a search engine of today and the two sides are necessary for each other, one would not exist without the other. That applies at least for the advertisers. Without search users there would be no advertisers interested in advertising in the format of sponsored links. Without advertising, though, search users would most likely continue using the search engine unchanged.

This leads to three main elements of two-sided businesses. It is also three features common for almost all Internet-based business, without any exception for search engines. (1) Two different groups of customers who need each other and are able to meet at the provided platform (search users and advertisers can use the search engine as platform). (2) There exist external circumstances across the two groups. For search engines that would be the relation between a higher amount of advertisers and the search users likelihood of finding relevant advertisements and the higher the amount of search queries the likelihood of advertisements being noticed and clicked on improve. (3) The pricing structure is fundamentally unequal, with one group financing both sides consumption of the platform.125

This two-sided business structure for search engines makes it unsuitable for competition authorities to define the relevant market without taking into ac-

count the peculiar relationship characteristic for a two-sided market.\textsuperscript{126} It could thus be argued that the Commission’s likely finding that Google is dominant in two separate markets indicates that they have failed to recognise the dynamics of competition for search engines or at least that they have not established sufficient emphasis on the fact.

Zingales\textsuperscript{127} recognises that there exist two alternative and common strategies on how to define a two-sided market, both with limitations. First, the traditional position to bundle the two products together as a “business ecosystem” and secondly, defining market(s) as centred around one of the products and at the stage of assessing market power consider the other product as a complimentary product. The first method was used by the Commission in Microsoft/Yahoo, where they defined the market as “online search advertising” and explained the interrelationship between search and advertising. The second method has, at least partly, been used in a Beijing court decision in case Chinese State Administration of Industry and Commerce (SAIC) v. Baidu. Baidu, the leading search engine in China, was alleged on the basis of Article 17 (iv) of the Chinese Antimonopoly Law, which prohibits insertion of exclusive dealings by dominant undertakings. Baidu claimed immunity under the antimonopoly law due to the fact that the search services were being delivered for free. The Court objected that Internet services provided free of cost is not equivalent to a free service for charity and that the search engine providers may obtain actual or potential commercial benefits, such as attracting Internet users and employing marketing services.\textsuperscript{128}

The first assessment, with bundling the two sides together is limited, according to the thesis’ author, in the case of online search engines as to it fails to recognise two features. Firstly, the feedback effects are unilateral in the case of online search engines, since the search users do not benefit from an increase in advertisers but the other way around is benefitting the advertisers. Secondly,


\textsuperscript{127} PhD candidate at Bocconi University.

search engines rely on the large amount of collected user data allowing them to refine their search algorithm and thus create an even more qualitative product, serving both sides of their platform. These two features are not captured if the two sides are bundled together and seen as one, i.e. as “online search advertising”.

The second method, to defining a market centred around one of the products and first at the stage of assessing market power consider the other product as a complimentary product, seems to fail to recognise the importance of online search as an important part of the business. The search users play a key role for the business idea of online search engines to function. There would be no market for search advertising if no search users existed.

Zingales reaches the conclusion, due to the limitation of commonly provided solutions for two-sided businesses, that the most reasonable approach in the case of online search engines seems to be to make a prima facie product-specific market definition, where a description of the market participants and the sources of competitive constraints are present. Market shares would be given only a cursory look. These prima facie markets should be as narrow as possible. At a second stage the competition authorities would be able to look into the scope for exercising market power, the competitive constraints from potential entrants and whether any submarkets can be identified. This assessment procedure is in accordance with the Commission notice, paragraph 43. The prima facie market would rely on an identification of “all those products and/or services which are regarded as interchangeable or substitutable by the consumer, by reason of the products’ characteristics, their prices and their intended use”. The additional, second, stage would be to validate the competi-


tive constraints from the market, i.e. taking into account the market realities perhaps undermining the undertakings alleged market power.\(^{132}\)

The problem with this proposed solution is that it is merely a solution. It is guidance as for ascertaining the markets, but the problematic stage is the second one: to qualitative validate the competitive constraints as to distinguish those who can affect Google’s market power from those who cannot. Zingales does though provide answers as to how this can be done in practice in the case of online search engines by applying the proposed method.

When Zingales applies his own solution he reaches a conclusion on the market definition for online search engines. The prima facie market would be online search advertising, with competitive constraints mainly from offline algorithmic search and directory-based search\(^{133}\) respectively offline and non-search advertising. Demand substitutability is recognised as low due to the positive feedback loop regarding SERP relevancy\(^{134}\), unless Google lose an abundant proportion of their relevancy in search results relative to its competitors. The volume of user data hold by Google further strengthens the theory of low demand substitutability. Demand substitutability due to the innovation of new products is also recognised as low according to Zingales. Based on Google’s financial situation and previous behaviour it is likely that the most upcoming innovations will come from Google themselves. Competition is on the relevance of search results, instead of on price. Google’s competitors have though no insight into the algorithm and innovations on relevance contributed by Google. This creates an information asymmetry. Supply substitution can be assumed on similar grounds. Google’s investments in relevancy and their advantage of scale, altogether with the information asymmetry in the market makes it hard for (potential) competitors to gain traffic at the expenses of Google. Regarding demand and supply substitution for the advertisers Zingales recognises that Google is seen as a must-have and that at price increase could cause substitution, but that it had to be substantially higher than 5-10 percent to


\(^{133}\) Such as the one that Yahoo relied on in 2000 when they sub-contracted Google.

\(^{134}\) See chapter 6.1
have an impact. Zingales therefore concludes that demand and supply substitution does not seem to apply any significant competitive constraints to Google’s business in online search and online advertising. Potential competitors could be a factor to count on, according to Zingales, but they face a heavy start with web-indexing machines and a competent engineer team comparable to Google’s. He further recognise that other online giants such as Facebook, MSN, Twitter, Linked In, Apple, Amazon and eBay can expand into Google’s market by inserting a search mechanism on their pages and thus be seen as potential competitors. Zingales finishes by declaring that these competitive threats seem not likely to pose more than marginal threats.\textsuperscript{135}

The methodology presented by Zingales is, in the thesis author’s opinion, reasonable, but in absence of reliable econometric data it is uncertain to argue and reach a conclusion on the market definition. His conclusion should therefore be seen only as theoretical. Zingales does further use a traditional method for applying competition rules on the market definition, failing to recognise the market realities that might undermine Google’s market power. The strength in the advertisers’ demand is almost completely overlooked and it seems like Zingales fails to recognise the possibility of new innovations entering the market and gaining traffic from Google’s advertising. The new potential competitors have not to be in the market for online search, Google will face real constraints if a new innovation comes with greater power to gain advertisement clicks and purchases. Thus it can be argued that Zingales method follows applicable law and therefore is reasonable under current regulations, but it does not overcome the problems with the dynamics and the complexity of the market.

7. Does Google’s High Market Shares Equal a Dominant Position?

An easy solution to determine dominance would be not to define a firm market, but instead jump straight into the question on dominance. According to the Commission’s Guidance paper on enforcement priorities such an approach to determine dominance can be possible if the company at issue have significant market power. If the undertaking is capable of profitably increasing prices above the competitive level for a significant period of time, it shall be seen as if the undertaking does not face sufficiently effective competition constraints and therefore dominance can be assumed.136 A significant period of time is normally considered as two years.137 Case law from 1979 onwards supports this presumption of dominance.

The Commission might have adopted this possibility in the current Google investigation. In their preliminary statements they shortly determined that Google is dominant in the market for web search and in the market for search advertising. The only argument present was the high market shares in web search Google have held in the most European countries for several years.138 This indicates that the Commission does see Google as dominant in accordance with paragraph 11 in the Guidance paper. Furthermore the Commission seem to separate the two markets at stake, instead of treating them as a single market, which suggests that the Commission have determined Google to be dominant on both sides according to the high market shares in web search.

The Guidance paper requires a capability to increase prices above the competitive level for a significant period of time for the undertaking to be regarded as dominant. Google’s search engine is financed by search advertising through their tool AdWords. The price for tying your advertisement to a keyword is set by an auction process, where Google not intervene in the price setting. The

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136 Communication from the Commission - Guidance on the Commission's enforcement priorities in applying Article 82 of the EC Treaty to abusive exclusionary conduct by dominant undertakings, 24 February 2009, C 45/02, paragraph 11.
137 Giorgio Monti, Review of post Guidance paper case law on art. 102, Lecture at Stockholm’s University at the course Competition Law, 15 March 2013.
highest bidder gets the keyword that will activate the advertisement. Advertisements are not even sold at the highest price possible, instead the winner of the auction has to pay only one cent above the second highest bid. This cannot be seen as profit maximisation and definitely not as a price above the competitive level. This mechanism for pricing is ruled by the demand of the market.

Furthermore, the market shares implication of dominance must be handled with caution. As described above the shares of online search via Google cannot automatically be interpreted as equal to their shares on the market, i.e. their market power. Online search is only one side of Google’s two-sided business and it is not the one side where they earn their revenues, even though the two sides are strongly connected to each other.139

A finding of dominance, without the detour around the market definition, in accordance with the Commission’s Guidance paper on enforcement priorities is thus not possible regarding Google’s online search engine.

8. Discussion

How should the concepts of relevant market and dominant position be interpreted according to Article 102 TFEU in the context of online search engines?

At first glance it might be an easy task to answer the question on how to define the relevant market and dominant position in the context of online search engines, but after a closer look it is obvious that the market realities hardly allows to be identified under competition law with the methods present today. A number of problems have been identified in the thesis, this chapter will provide a summary and associated discussion will be presented.

The problems that have been identified can be summarised as follows. (1) The special characteristics of the two-sided business calls for modified actions. The relation between online search and advertising is special due to the establishing of a financing mechanism completely dependent on the situation where the first group (advertisers) provides the services offered to the second group (search users) and due to the feedback effect for these two. The special relation is manifested in the interaction between organic search results and sponsored links. (2) The rapid innovation and constant development of the market, which constantly expands the market borders and thus changes the competition structure, needs to be taken into account in the application of competition rules. (3) The impracticality of the SSNIP test. The difficulties in applying a quantitative measure instrument onto either side of the market are significant. (4) The importance of user data and network effects, which creates another dimension to the already complex situation. (5) Market shares on Google’s online search should only be used as an indicative measure of their market powers and their real power, i.e. power over price, cannot be captured under a simple market share analysis.

The following sections will discuss each of the five identified problems separately, even though they all are associated.

8.1 Special Characteristics of the Two-Sided Business

A two-sided business is characterised by three main features; firstly, they function as match-makers allowing two groups of customers to meet. Secondly, they strive to build audience, the bigger the audience the greater the chance of
Julia Lindfors  

finding a suitable match between the members of the two groups. Finally, a common platform reduces costs for both groups. It is also common that one of the customer groups are funding the entire business and thus that the two groups are interrelated and inseparable, where both sides are needed to create a business value. It goes without saying that these market realities need to be noticed in a market analysis.

The special characteristics of search engines as a two-sided business has been recognised to some extent in two merger cases (Google/DoubleClick and Microsoft/Yahoo), but the Commission nevertheless dealt with the two sides separately and concluded that it was not necessary for the present decisions to establish precise market definitions. They also failed to recognise the importance of user data and the unilateral network effects. In the Commission’s preliminary answers from April 2013 regarding the current investigation on Google’s alleged abuse the two markets seem to be separated again, this time as “web search” and “search advertising”.

A method for dealing with the two sides altogether has been proposed by PhD Candidate Zingales. The most reasonable approach, according to him, seems to be to make a prima facie product-specific market definition, where a description of the market participants and the sources of competitive constraints are present. Market shares would only be given a cursory look. At a second stage the competition authorities would be able to look into the scope for exercising market power, the competitive constraints from potential entrants and whether any submarkets can be identified. What Zingales do is to apply applicable law onto the complex market for online search, his reasoning are legitimate and he manage to capture the main characteristics of online search engines. He does also, by a theoretical approach, point out demand substitution, supply substitution and potential competitors finding that Google is more or less unthreatened in its market power. Even though Zingales in most aspects captures the market realities he, and applicable law, fails to capture all aspects of the market.

Indications are that the relevant product market according to applicable law requires a separate management of the two sides of online search engines. This also goes in line with the Commission’s long standing case practice regarding
two-sided businesses. In that case a product market for each side has to be identified, which is not easily done without being forced to ignore the complex relation between online search and online advertising. A separation of the two markets, not taking into account their relation, risks not mirroring the market realities and thus find market power that might not be representing the undertaking’s actual power on the market.

The Commission’s preliminary result of finding Google as dominant in “web search” is vague. It is clear that they have taken out offline search from the potential product market definition on the search side. It is though not clear if they define web search as the market for all search available at the World Wide Web or if they define it as limited to general search engines. The finding of Google’s market power will differ depending on what definition is meant by the Commission’s suggested web search market definition. The Commission’s mentioning that Google holds market shares of well above 90 percent indicates that they consider web search as limited to general search engines, where Google mainly face competition from Yahoo and Bing in the EEA. There is reason to question the reality of this proposed market definition, since the market realities can tell that Google most likely face competitive constraints from all search engines present online, i.e. from vertical search, universal search and general search. It is possible, but perhaps though too far, to stretch out the product market as to include all online information providers. Other potential product market definitions for the search side of Google’s two-sided business are discussed in chapter 4. In the absence of reliable econometric data it is not possible to conclude on the real influence of potential competitors and demand and supply substitution.

On the other side the Commission found Google holding a dominant position in the market for “search advertising”. This can, most likely, be interpreted as advertisements in text format appearing as sponsored links next to the search engine result pages. The finding of search advertising as a product market goes in line with the market investigation performed under the Google/DoubleClick merger case, this view was though not upheld by the majority in the market investigation in the merger case of Microsoft/Yahoo. The market for online advertising has to take into account the demand of the customers, i.e. the adver-
advertisers. The advertisers want as many clicks (and purchases) as possible as a result of their advertising, thus they will choose to advertise wherever this is successful. It is likely that advertising based on personal data is more successful when it comes to clicks, the relevance of the advertisement is then higher to the Internet user. This is called targeted advertising and is used by many web page owners, such as social media pages and online retailers. It is also used by vertical search engines, which not only use the search advertisements in text format. The vertical search engines have the advantage of search users even more interested in the topic for the search, since they already are visiting the vertical search engine due to this interest. Targeted advertisements at vertical search engines should therefore be seen as holding truly competitive constraints against Google’s search advertising. Thus, in my opinion, a market for targeted advertising online would better reflect the market realities. A variety of potential market definitions for online advertising are presented in chapter 5. The problem with the absence of reliable econometric data applies for online advertising as well.

8.2 The Problem with Rapid Innovation and Constant Development

In year 2000 we did not know that online search engines would play such an important role in organising the Internet. In the same way, we do not know anything today about what the Internet structure will look like in the future. Businesses in the Network economy are characterised by rapid innovation, constant development, high technology, the need for complementary products and network effects. The competitive constraints on undertakings in the Network economy are though not mainly from present products and firms, but from new innovations, i.e. new products. It is also known that a common feature for some markets in the Network economy is that competition is not on the market, but for the entire market.

Article 102 cases shall today be based on the market as it looks like the day for the decision (or in practice a period of time prior to the decision). According to applicable law a determination of the relevant market taking into account the market structure of today is correct. However, this is not a suitable solution for businesses in the Network economy, and thus not a suitable solution for the
product market definition for online search engines. The market realities are different for these undertakings and the market structure need to be understood. The Google investigation performed by the Commission started in 2010 and today, early 2014, still no decision has been announced. How much have Google and the market for online search engines changed during these years?

Online search is a successful method for connecting advertisements with their targeted customers. It is though possible that an even more successful method will rise in the future, why Google faces real time threats. There is no reason to believe that companies would continue to spend their advertising budget on Google if another method for successful advertising were present. Free online search would unlikely survive as a service if the advertisers disappeared. Not realising this when investigating the market is thus not understanding the market situation present for online search engines today.

8.3 The Impracticality of the SSNIP Test

The SSNIP test measures demand substitutability for products competing on price. The products provided by an online search engine compete on quality instead of on quantity, i.e. price. A test of price increase in either side of the business does therefore miss the purpose. An application of the SSNIP test on online search leads to a fictional price increase on a price tag of zero, thus no demand substitutability can be shown with the SSNIP test. This is though not equal to a non-existing substitutability. On the other side, online advertising, an application of the SSNIP test leads to a complicated situation. The pricing structure of the advertisements relies on an auction in combination with a complex system of quality score. It is thus not possible to say what the price is for advertising in the format of a sponsored link, this vary between keywords, between current trends and between quality score for the companies advertising. The price might change on a day-to-day basis. Furthermore, it is possible to argue that the SSNIP test should be applied to every single keyword able to purchase for advertising. This is a reasonable argument due to the little substitutability between different keywords. A company interested in tying advertising to a keyword like “iPhone” would not change to purchasing the keyword “Nokia” due to a price increase. It can thus be concluded that there exists a
number of serious problems with the application of a SSNIP test on the market for online search engines.

8.4 The Importance of User Data and Network Effects

Network effects are common in the Network economy and also common for two-sided businesses. It applies to Google in more than one way. Google operates in a variety of Internet-based businesses, but also to some extent with smartphones, operative systems and applications. It is hard today to not use some of Google’s services. Customers used to Google’s interface will recognise it throughout several of the products and services provided by Google. All Google’s services are also compatible with each other, why the usage of the services functions smoothly without annoying connection problems. This is a way of benefiting from network effects, where the users are locked in. It is of course possible to use other products and services than them originating from Google, but once you have started using Google’s products it is likely that you will continue on using additional services or products from Google. The variety of Google’s businesses also allows them to collect user data from several sources and using it to target advertising even further. A customer using Google’s e-mail, calendar, search engine, browser etcetera will give away much personal data, i.e. information on, for instance, interests, geographic position, age and gender. Google can then use this user data to improve their products, such as refining the search engine result pages. In turn, this will give them the benefit of match-making between the two sides of customers; the search users and the advertisers. This creates a positive feedback loop, where user data plays a key role for Google’s continuous improvement on the relevance of their search results as well as on the individualised relevance of the advertisements.

It is hard to compete with Google on the collection of user data. They have the advantage of being a huge company active all over the world in a variety of businesses and used by an incredible number of people. If a new entrant would like to compete with Google on the amount of user data they would face great barriers. Even though it is possible to copy Google’s method, a new entrant would still be 15 years after Google in the gathering. These are the market real-
ities that a market investigation needs to handle, in addition to all other problematic realities for online search engines.

Google does though face potential competition, depending on the search users’ attitude to the usage of personal data. Some upward trends in search user awareness and a negative attitude against giving away personal information to large size companies have been noticeable recently. This has created a market for online search via anonymous search engines, which do not collect user data whenever the user types a query. Depending on the trends amongst the search users, Google might risk losing search users to these anonymous search engines. As a consequence, Google potentially has to think twice regarding continuing collecting user data. Then again, Google has potential to create an anonymous search engine for the users concerned for their privacy if they consider this as a threat.

8.5 The Problem with Market Shares Implying Dominance

An undertaking with power over price can be seen as dominant without a firm market definition. This possibility is brought in in the Commission’s Guidance paper on enforcement priorities, paragraph 11. Even though Google without doubt have a large share of all online search queries via general search engines, this cannot be interpreted as a power over price. Google’s pricing model, with the Ad Auction, does not allow Google to take a higher price than what the market is willing to pay. It is the advertisers that set the price for purchasing so-called sponsored links. A dominant position held by Google in online search and online advertising can thus not be implied without taking the detour around the market definition, followed by an establishment of the market power held on that relevant market.
9. Conclusion

Finally, all these findings of problematic aspects on the market for online search engines leads up to a conclusion on how to interpret the concepts of relevant market and dominant position where there seems to be mainly three potential outcomes.

Firstly, it is possible to continue on the path established by the Commission. This is to force online search engines under the existing applicable law and methods. When doing so, problems will occur along the way and the definition will most likely not be able to comprehend all features that together constitute the market realities for online search engines in the Network economy. Thus an application of applicable law will most likely be misleading and it cannot be fully guaranteed that it mirrors the reality.

Secondly a modernisation of applicable law, i.e. Article 102 TFEU, could be carried out, in order to limit the problems occurring with today’s antitrust regulation and to make it more flexible and humble for the Network economy and its characteristics that affect the market realities of undertakings present online. This can particularly be illustrated by the difficulties on describing online search engines in the light of competition law and the complex business model that governs the market definition. A modernisation of Article 102 could either be dealt with in practice, where case law and the Commission’s own guidance notices play important roles, or dealt with by a modernisation of the legislation.

A modern Article 102 would, according to the thesis’ author, take into account the following three elements: 1) A possibility to perform a forward-looking market analysis. 2) A possibility of exemption from the liability that a dominant undertaking bears in the event that the market structure is such that only one player can survive. 3) A possibility to measure quality as a complement to the quantitative SSNIP test.

Problems will most likely occur when modernising Article 102, especially regarding the time-consuming legislative process. During that time the markets might have changed and it is possible that healthy competition has been negatively impacted in the time waiting for a new legislation. It is also complicated to find a legal phrasing addressing the specific problems identified. The article
must survive market changes. Furthermore, it is not appropriate to change legislation according to a specific case. The law has to be applicable in general and it shall reflect general changes in the market, not a single undertaking’s position.

Thirdly and finally, it could be argued that competition authorities should stay away from markets in the Network economy, since the short-lived monopolies stimulates competition and innovation and thus new entrants will take over the market in a short period of time and create new short-lived monopolies. This stimulates the economy and continuing innovation, which must be seen as a benefit for the society. The large number of products innovated or acquired by Google shows that Google is a company constantly expanding and exploiting new ground. This opens up for others to continue in the aftermath of Google’s innovations. Google does however seem to have survived in a very strong position for several years now gaining more and more markets in the Network economy. Thus, in order to continue a healthy competitive structure, it seems necessary to at least investigate Google’s potential market power and force the complex market structure under applicable antitrust laws.

Although, one question remains unanswered: what is the proper product market definition that takes into account the market realities for online search engines and the changed dynamics present in the Network economy? Hopefully the case law and/or the legislators will provide guidance in the near future, without hampering innovation and development in our network era.

9.1 Reflection on Method and Material

When beginning to write this master thesis the chosen question felt not easy, but at least manageable. During the writing process it became clear that there exist a myriad of potential answers, depending on the approach and the way of defining what Google does. A variety of potential markets for online search can be found, even more potential markets for online advertising are thinkable. The fact that online search engines have a business model with two-sides does not make the aim easier. As the author of this thesis I had to realise that it is not possible to give a straight answer regarding the market definition and the concept of dominance according to Article 102. The questions can, hopefully, be
properly answered with a great amount of statistics, a thorough market investigation and some insight information into Google’s secret core business strategies. It is thus not possible for a thesis student in law to achieve all this in only one semester, why the conclusions are mostly theorising around the concept of a relevant product market for online search engines. The chosen method, a legal dogmatic method influenced by economic theories, is in my opinion suitable for the question at issue. However, the lack of in-depth information regarding the market realities made the project harder than thought. The legislation does unfortunately not offer much guidance and the existing case law is limited. Printed doctrine has not been able to capture this particular question already, why argumentative articles had to serve as a base for the analysis of the market definition.
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