

Centre for Law, Economics and Society

Research Paper Series: 4/2012



Market Power in Online Search and SocialNetworking: a Matter of Two-Sided Markets

Florence Thépot

**Centre for Law, Economics and Society
CLEES**

Faculty of Laws, UCL

Director: Dr Ioannis Lianos



CLEES Working Paper Series
4/2012

**Market Power in Online Search and Social-
Networking: a Matter of Two-Sided Markets**

Florence Thépot

September 2012

Market Power in Online Search and Social-Networking: a Matter of Two-Sided Markets.

Florence Thépot¹

The industries of online search and social networking are characterised by high market shares held by a very limited number of actors. Google holds 85% of the market for Internet search engines in terms of traffic, and has been maintaining its market share at this level since 2008. Eight years after its creation, the social-networking website Facebook has 800 million active users in 2012, accounting for about 65% of the market share of social-networking websites, in terms of registered users. As advertised-based media, search engines and social-networking websites have the characteristics of a special type of market known as two-sided markets or platforms. Two-sided markets are platforms which have two distinct user groups providing each other with network benefits. The platforms enable the user groups to minimise the transaction costs they would have otherwise incurred, of searching for each other and interacting. Economics of two-sided markets cannot be ignored by competition authorities in assessing market power in the search and social networking industries. The paper provides a framework for defining the relevant market and for assessing market power in the industries of online search and social-networking websites, focusing on the current leaders Google and Facebook. It is argued that online-search and social-networking websites may exert competitive constraints on each other, as both operate in the relevant market for ‘monetization of user’s information by online advertising’.

1. Introduction

The fast-evolving markets for online search and social networking are characterised by high market shares held by a very limited number of competitors. Eight years after its creation, the social-networking website Facebook has 800 million active users in 2012, accounting for about 65% of the market share of social-networking websites in the US.² Google holds around 88% of the global market for Internet searches, and has been maintaining its market share at this level since 2008.³ On-going EU and US investigations show that dominance in these markets may raise competition concerns: for instance, Google has recently been investigated by the European Commission for allegation of abuse of its dominant position relating to alleged

¹ Florence Thépot is a PhD candidate at University College London, and a fellow of the *Centre for Law, Economics and Society*. A draft of this paper was presented at the 19th CLaSF workshop on ‘Competition Law, Regulation and the Media’, City Law School, Thursday 26th January 2012. I am grateful to the organizers and the participants for their valuable comments.

² Kallas, ‘Top 10 Social Networking Sites and Forums 2008-2012.’ Available at: <http://www.dreamgrow.com/top-10-social-networking-sites-by-market-share-of-visits-august-2012/> (retrieved 09/10/2012).

³ KarmaSnack, ‘Search Engine Market Share.’ Available at: <http://www.karmasnack.com/about/search-engine-market-share/> (retrieved 09/10/2012). For the evolution of search engine market share since 2008, see Andromida, ‘Search Engine Market Share Statistics.’ Available at: <http://andromida.hubpages.com/hub/search-engine-market-share> (retrieved 11/10/2011).

unfavourable treatment of search services companies.⁴ The Federal Trade Commission (FTC) opened a formal investigation against Google concerning similar allegations.⁵

While opening the probe against Google, the European Commission acknowledged the difficulty of establishing dominance in the Internet search market due to the particular nature of Google's business.⁶ Indeed, search engines and social-networking websites have the characteristics of a special type of market known as two-sided markets or platforms. Two-sided markets are platforms which have two distinct user groups providing each other with network benefits. The platforms provide a meeting place to two groups or parties, and enable them to minimise the transaction costs they would have otherwise incurred, of searching for each other and interacting.⁷ To do so, such platforms may engage in matchmaking or building audiences.⁸

Google, as other search engine portals, acts as an intermediary between advertisers and users. Google provides a service that attracts users who form an audience that in turn attracts the advertisers. As with other advertising-supported media, Google earns all of its revenues from advertisers.⁹ Social-networking websites, such as Facebook, engage in building an audience and are mostly advertising-based, while their core function for the users is also to be an exchange platform.

Common features of two-sided markets are that each group on one side of the platform tends to realize more value when there are more users on the other side. For example, the interest of using social-networking websites for users increases the more groups of people use it too as it saves the cost of interacting with these people on bilateral basis.¹⁰ Two-sided markets are characterised by indirect network externalities that the platform helps internalise. Prices and profits are linked on the two sides and each side of the platform exerts some constraint on the other.¹¹ This has practical implications in terms of market definition and assessment of market power: for example, the market has to be defined in relation to the other side of the market; the feedback effects between the two markets need to be accounted for in

⁴ European Commission, 'Joaquín Almunia Vice President of the European Commission responsible for Competition Policy Statement of VP Almunia on the Google antitrust investigation. SPEECH/12/372, 21/12/2012.

⁵ Sara Forden, 'FTC Said Poised to Finish Google Antitrust Probe in Weeks', *Bloomsberg*, 30/08/2012.

⁶ See also Almunia, Competition in Digital Media and the Internet. Speech delivered at UCL, 7 July 2010. For a video recording of the speech, see: <http://www.ucl.ac.uk/news/news-articles/1007/10070802> (retrieved 10/10/2011).

⁷ D. S. Evans and R. Schmalensee, 'Markets with Two-Sided Platforms' (2008) 1 *Issues in Competition Law and Policy* 667.

⁸ D. S. Evans and R. Schmalensee, 'Industrial Organization of Markets with Two-Sided Platforms' (2007) 3 *Competition Policy International* 152.

⁹ D. S. Evans and R. Schmalensee (n 7) 671.

¹⁰ In the case of advertising-based media, the advertisers value the platform the more users there are, but the users may not value the platform if there are more advertisers. The platform internalises the negative externality suffered by the users by 'paying them' to use the service, ie. by offering free content. Most search and social-networking web portals are indeed free of use. See Evans and Schmalensee (n 8) 155-156.

¹¹ D. Evans, 'The Antitrust Economics of Two-Sided Markets' (2003) AEI-Brookings Joint Center For Regulatory Studies 49.

terms of prices and profits, and the barriers to entry have to be assessed differently.¹² Ignoring the specificities of such markets may yield erroneous conclusions in competition analysis.¹³

In addition to being two-sided platforms, social-networking and search websites have common and special features such as being advertised and running as web-based media. Moreover, both industries seem to be currently led by 'winner-takes-all' companies, respectively Facebook and Google. This makes it relevant to analyse both industries alongside each other, with their special features demanding extra care in the assessment of market power.

In this paper, it is argued that the economics of two-sided markets cannot be ignored by competition authorities when dealing with search and social networking industries. After evaluating the economic foundations that are useful in this case, the different characteristics of the search and social-networking websites as platforms for two-sided markets will be established, focusing on the current market leaders Google and Facebook. The paper will provide a framework for assessing market power in the markets for search and social-networking websites, encompassing an assessment of relevant Commission decisions.¹⁴ The issue of search bias, predominant in the current investigation on Google's alleged abuse of dominance, as well as the issue of overall consumer welfare are outside the scope of this paper.

2. Search and social-networking websites: example of two-sided platforms.

2.1. Two-sided markets: some economics

The economics of two-sided markets appeared with the works of among others, Caillaud and Jullien,¹⁵ Rochet and Tirole,¹⁶ Evans and Schmalensee,¹⁷ and Armstrong.¹⁸ Two-sided markets comprise an intermediary whose role is to act as a platform between two distinct markets. The two different markets produce indirect network effects on each other, and each side is linked with a feedback effect. A common example of two-sided markets would be a heterosexual dating club. Men value the club only if women come to the club, and vice versa. The platform, here the dating club, enables both group of customers, men and women, to interact and search for each other. The platform helps economize the searching cost incurred

¹² Ibid.

¹³ For an account of the fallacies that arise from using the one-sided market logic in assessing two-sided markets, see: J. Wright, *One-Sided Logic in Two-Sided Markets* (2003) AEI-Brookings Joint Center For Regulatory Studies.

¹⁴ Merger cases: COMP/M.4731 Google/DoubleClick, 11 March 2008 and COMP/M.5727 – Microsoft/Yahoo! Search business, 18 February 2010.

¹⁵ B. Caillaud and B. Jullien, 'Competing cybermediaries' (2001) 45 *European Economic Review* 797; 'Chicken & egg: competition among intermediation service providers' (2003) 34 *RAND Journal of Economics* 309.

¹⁶ J.C. Rochet and J. Tirole, 'Platform Competition in Two-sided Markets' (2003) 1 *Journal of the European Economic Association* 990

¹⁷ D.S. Evans & R. Schmalensee (n 7 and 8).

¹⁸ M. Armstrong 'Competition in Two-Sided Markets' (2006) 37 *RAND Journal of Economics* 668.

compared with if the men and women were to operate on a bilateral basis. The platform also helps get the balance right between the two groups of users via its pricing strategy. Charging the women a lower entry fee than the men is an example of price structure commonly adopted in dating clubs.

A two-sided market exists if two groups of agents interact via an intermediary, and if the decisions of each group impact the outcomes on the two sides, typically through an externality, such as a network effect.¹⁹ In economic terms, there is a two-sided market if two groups of consumers are linked by an externality and if they cannot internalise it on a bilateral basis due to high transaction costs.²⁰ In two-sided markets, the price-cost mark-up does not just depend on the elasticity of demand and marginal cost, but also on the elasticity of demand on the other side, as well as on the price-cost mark-up charged.²¹

These conditions make two-sided markets different from other markets even if in most markets, parties interact via an intermediary too. In these markets, such as the wheat market, the price structure does not matter in terms of optimal outcome. A tax levied on a buyer will have the same effect as a tax levied on a seller. In contrast, the price structure in a dating club matters: a lower price for women than for men brings a higher outcome, which equally matters as the price level. Similarly, there might not be such interdependence between the two sides of the intermediary in a one-sided market. The profit of a farmer selling once wheat to an intermediary - e.g. a grocery - may not be linked to the profit of the grocery selling the good. In that case, the conditions for a two-sided market are not fulfilled in spite of the existence of an intermediary.²²

The intermediary or platform plays an essential role in two-sided markets: that of internalising the externalities, and diminishing transaction costs between the two groups of users. To do so, platforms may engage in matchmaking users, such as in exchange platforms. Another type of two-sided market is advertising-based media. Such media acts as a platform between users and advertisers. They engage in building an audience to make available to a pool of advertisers. Web portals, including online search and social networking websites are example of advertised-based media. As operating with two markets, the platform must follow a different profit-maximising approach than a traditional business. The platform has to account for the demand of each side of the platform, and the effect the demand of one side has on the other side. Similarly, the platform must take into account the costs attributed to each side, as well as the costs of running the platform.²³

Taking into account two-sided market characteristics is of fundamental importance when undertaking a competitive assessment. Not doing so, a competitive

¹⁹ M. Rysman, 'The Economics of Two-Sided Markets' (2009) 23 *Journal of Economic Perspectives* 125.

²⁰ D. S. Evans and R. Schmalensee (n 8) 154.

²¹ M. Rysman (n 19) 129.

²² *Ibid*, 126.

²³ D. S. Evans, 'Two-Sided Market Definition', in *Market Definition in Antitrust: Theory and Case Studies* (chapter XII, ABA Section of Antitrust Law, 2009)7.

assessment might fall into various fallacies, identified by Wright.²⁴ A first erroneous conclusion induced by using a one-sided approach to a two-sided market is that a price structure must reflect relative costs, in the logic that users must pay to cover the costs. However, in the example of the night club, the men do not pay in relation to the cost of using the club, but in relation to the surplus they derive from an additional woman on the other side of the platform. The price does not necessarily reflect the cost of use, but it can still be a competitive market. Related to this issue, a high price-cost margin does not necessarily indicate the existence of market power. Similarly, a below-cost pricing does not necessarily stem from a predatory pricing strategy.

Another one-sided fallacy is to think that more competition can impact on the price structure. It is likely that a monopolist night club will price the same way as many clubs competing fiercely with each other: higher price for men than for women. More competition will certainly drive the price level down, but is unlikely to bring a more efficient price structure. Also, it would be incorrect to consider the price structure as a cross-subsidy between the two sides of the market. This would ignore the indirect network effect at stake: in the night club example, the participation of men depends on the participation of women. As a result, the revenue to the club associated with an additional woman generates the revenue associated with an additional man, which amounts to the total revenue gained by the club. Each customer therefore triggers revenue that covers more than the incremental cost. In contrast, a cross-subsidy implies that one side produces a gain below the incremental cost of its participation, and that the whole platform would be better off without their participation, in terms of revenue, which is not the case in terms of two-sided markets.²⁵

2.2. Google and Facebook, platforms of two-sided markets.

2.2.1. Online search and its current market leader, Google.

Over the last 15 years, the business of online search has grown very rapidly in line with the general development of the Internet, if not faster. Finding a piece of information among the immense quantity of data available on the Internet has become tremendously important if not the core tool of Internet users. At the end of the 1990s, Google emerged in the online search landscape, with a reputation for producing more relevant results than the existing search engines, its algorithm being based both on text matching and on 'reputation', a proxy for the quality of the web page.²⁶ Just two years after its launch, Google accounted for 7 million searches per day. Today its revenue amounts to \$12.21 billion for the quarter ending 30 June 2012,²⁷ and it holds around 85% of the market for online search. The use of the search engine is free to users. Online search companies fund their system with advertising revenues. They sell companies advertising space alongside search results, tailored to the keywords of the search being conducted. On Google, two

²⁴ J. Wright (n 13).

²⁵ Ibid 2-9.

²⁶ S. Brin and L. Page, 'The Anatomy of a Large-Scale Hypertextual Search Engine' (1998) Computer Science Dep't, Stanford Univ. (1998), <http://infolab.stanford.edu/pub/papers/google.pdf>

²⁷ Google, Google Announces Second Quarter 2012 Financial Results. Available at:http://investor.google.com/earnings/2012/Q2_google_earnings.html (retrieved 09/10/2012).

types of result appear as the outcome of a search query: the list of websites as 'organic' results, and the corresponding list of ads that have been paid for by advertisers. In other words, Google attracts traffic with its search functionality and sells the traffic's 'attention' to advertisers as a way to generate its revenues.

2.2.2. Social networking and its current market leader, Facebook.

Social networking websites provide an array of means for users to interact and socialize with one another: the facilities offered include traditional internet communication such as messaging and email, as well as the possibility to share pictures, videos and files. In addition, social networking websites are used for blogging, discussion groups, among other interaction means.²⁸ Facebook, created in 2004, is a market leader in this industry, with a market share of 65% of social networking users in 2011. Other examples include websites such as Twitter (micro-blogging), LinkedIn (professional network), or MySpace (music). Facebook derives its revenues from advertising. Unlike other advertising-based media, users themselves create the content that attracts traffic, which in turns attracts the advertisers. Facebook's platform also supports other web-firms via the various applications it hosts.²⁹

2.2.3. Why are Google and Facebook two-sided platforms?

Google and Facebook are both advertising-based media. As with many web portals, advertising is used to fund the system offered to users for free. Both operate as the intermediary between two groups of agents: in one side, the web surfers that make search queries or use the social networking content. On the other side, they operate with a wide range of advertisers.

In economics terms, Google and Facebook intermediate the transactions between the users and advertisers helping internalise the network externalities. They enable exchanges to be realised, which may not otherwise occur.³⁰ To some extent they provide the 'liquidity' of the market by increasing the volume of buyers and sellers that can achieve mutually profitable transactions. Absent a certain amount of liquidity, the market may be too narrow and unsustainable.³¹

Google: Search-based advertising

²⁸ D R Gnyawali, W Fan, J Penner, 'Competitive Actions and Dynamics in the Digital Age: An Empirical Investigation of Social Net' (2010) 21 *Information Systems Research* 595-596 in S. Weber Waller, *Antitrust and Social Networking* (2012) North Carolina Law Review 6.

²⁹ D. S. Evans, 'Antitrust Issues Raised by the Emerging Global Internet Economy' (2008) 102 *Northwestern University Law Review* 291.

³⁰ D. S. Evans & R. Schmalensee (n 8) 152.

³¹ D. S. Evans, 'The Economics of the Online Advertising Industry' (2008) 7 *Review of Network Economics* 372.

Google attracts users with its search tool, as well as with other functionalities such as email, maps, videos, and as the owner of YouTube. We focus here on the search functionality offered by Google. In turn, Google's users, attracted by the content, attract advertisers to whom Google sells advertising space. More advertisers on one side and more users on the other side may increase the likelihood of beneficial matches between the users and the advertisers, which is the case for exchange platforms.³² If verified, this illustrates the indirect network effect between the two sides of the platform. If this is the case, the nature of this indirect network effect needs more attention.

The advertisers value the user side of the platform as users constitute an audience pool for the advertisements. The larger the platform is, the more interesting it gets for the advertisers as there are higher chances that purchases will be undertaken by the users. It is not as clear that users value the other side of the platform as much as the advertisers do. Users may value the online search more if it provides advertisements that are relevant to the query, providing that they wish to purchase something.³³ In that situation the question is whether more advertisers on one side bring more relevant advertisements to the users. This seems to be true, especially for narrowly advertised markets, for which a larger advertiser base makes a difference to the users' value. If there is no purchase intention, the users may stop using the website if there are too many advertisements. However, the platform may 'internalise' the cost of viewing ads by offering the service for free. In other words, advertisements disturbance might be seen as the non-price fee borne by the users.³⁴ Moreover, increased advertising enables Google to fund the refinement and development of the organic search functionality, and helps Google provide more free functionalities on top of the search engine (email, video and picture storage and so on).³⁵

Google also enables people to look for web-based businesses which appear in the list of organic search results. These businesses, which include other publishers, do not pay for their ads to be displayed and benefit from the platform. Other web publishers also subscribe to Google's advertising services. They allow Google for some space to insert its ads, for which the publishers receive a part of Google's revenue.³⁶ As such Google interacts with different actors that are themselves two-sided platforms: one example being social-networking websites.

Facebook: non-search advertising

Facebook attracts users with its social-networking system. It does not create content, but provides the framework for the creation of content by the users themselves (although the applications and other functionalities also constitute content). The content created by the users constitutes a pool of data that is used to attract the advertisers. The advertisers can use Facebook for their advertisements in different

³² Ibid.

³³ D. S. Evans (n 31) 293.

³⁴ D. S. Evans & R. Schmalensee (n 7) 670-671.

³⁵ K. Laudadio Devine, 'Preserving Competition in Multi-Sided Innovative Markets: How Do you Solve a Problem Like Google?' (2008) 10 *North Carolina Journal of Law & Technology* 83.

³⁶ D. S. Evans (n 31) 296.

ways: by creating a page for the brand advertised, by purchasing advertising space which will be displayed on Facebook's website and by buying 'sponsored stories' as well as embedding Facebook functionalities on the business' own website. When purchasing advertising space, the advertisers can select the audience to target, according to data available on age, location and so on. Facebook's functionality enables advertisers and potential buyers to increase the chance of matching their interest mutually and profitably.

Facebook also offers to display advertisements by the way of 'sponsored stories'. Sponsored stories are conveyed by users which interact on Facebook with the business's page or application: the story comprises the action of the user in relation to the business such as 'Martin is having coffee at Starbucks', as well as the picture brand and link to the business page. The picture constitutes the advertisement for which the business pays for. The advertisement is then conveyed by an individual user to all of his contacts.³⁷ From the advertisers' perspective this is a very powerful way of leveraging the networks of its customers/subscribers. Sponsored stories also entail recommendations by users that convey stories. The question of benefits to the user is similar to search-based advertising. The larger the pool of advertisers and users, the greater is the chance of a successful transaction. The users might be disturbed by the display of advertisements, in spite of their being relevant to their profile. In the case of the sponsored stories, the user's experience of the advertisements might be quite different. In that case, the advertisement becomes user content, sent by the user to their contacts. Users might value sponsored stories the same way they value non-sponsored stories published by their contacts. How they value this relates to the concept of network effects characterising all networks: each user values the system the more users there are, and the more they produce content. While the network effect can be limited by capacity constraints, or congestion, such limits do not seem to affect Facebook, which is still seeing its number of registered users grow. The settings of the system allow each user to select the users they wish to interact with, and the amount of information they want to see from each user, which helps reduce the potential cost to users of a too large and intense network.

Both platforms face a 'chicken and egg' issue in operating with two groups of consumers.³⁸ Advertisers have no incentive to buy advertising space if the users are not yet on board on the other side. The other side is the source of revenue attached to the transaction. Similarly, an absence of advertisers will decrease the value of the platform to the users, if this implies that the users have to pay for use. This is the characteristic of indirect network effects between markets whose participation affects each other's participation. More participants on one side induce more participants to join the other side of the platform. This positive feedback effect may well affect the market structure and the type of competition which then prevails. Large platforms usually see this pattern, as they are deemed to bring higher benefits to advertisers and users. The market for online advertising is populated by numerous platforms, but characterised by a few very large market leaders in their categories (online search,

³⁷ Facebook, Sponsored Stories for Marketplace. Available at: https://www.facebook.com/ads/stories/SponsoredStoriesGuide_Oct2011.pdf (retrieved 13/01/2012).

³⁸ B. Caillaud et B. Jullien (n 15).

social networking). Each category of online-based advertising is characterised by the domination of one platform, which can vary across countries.³⁹ For example, Google is the leader in western countries, while Baidu holds most of the Chinese online search market.⁴⁰

In summary, Google and Facebook are example of platforms of two-sided markets, characterised by indirect network effects which they help internalise, so as to bring value to both advertisers and users. The market structure in which both market leaders operate can be related to the existence of two-sided markets. In the case of Facebook, this is combined with the usual direct network effect that features each social-networking. In order to assess market power, the subtleties linked to these characteristics must be accounted for in order to avoid erroneous conclusions.

3. A framework for assessing market power.

We now turn to the actual analysis that must be realised by competition authorities in order to assess market power in such markets. The analysis encompasses several steps: the first stage is the market definition that is used to calculate market shares in the relevant market. Then the market share must be put in relation with the potential competitive constraints that determine market power, including the contestability of the market, the existence of barriers to entry and exit for new competitors, as well as the possibility of consumers to switch to another service. All these steps will be analysed in the light of two-sided markets economics. We will first examine market definition issues (3.1), before turning to competitive constraints (3.2) in the market for social-networking and online search.

3.1. Market definition

Competition authorities start their enquiry with market definition in the context of abuse of dominance⁴¹ and merger control procedures⁴². A first aim is to delineate the scope of the enquiry, in order to limit it to a manageable set of relevant products and companies. The relevant market includes all the products with which the product at stake may compete, with which there is a sufficient degree of substitutability. Substitution, which can come from the demand as well as from the supply side of the product, is a key concept in this respect. If from the consumer's perspective a competitor's good is a very good substitute for the product at stake, the demand elasticity is likely to be high, and therefore the company will not manage to raise the price sustainably, as the consumer has the possibility to switch to another product. This rationale underpins the test used by most competition authorities to define the relevant market, namely the Small but Significant and Non-transitory Increase in

³⁹ D. S. Evans (n 31) 298.

⁴⁰ Simon Montlake, 'China's Qihoo 360 Takes Aim At Baidu's Search 'Monopoly'', Forbes, 31/08/2012

⁴¹ Article 102, Consolidated version of the Treaty on the Functioning of the European Union (TFEU), [2010] OJ C 83/01.

⁴² Council Regulation (EC) No 139/2004 of 20 January 2004 on the control of concentrations between undertakings (the EC Merger Regulation) [2004]OJ L 24.

Price or SSNIP test. In this test, we look at the effect of a price increase of a 5 to 10% on the profit of the industry. If this price increase triggers a loss due to a lower demand, it means that the product has available substitutes that need to be included in the relevant market. If the price increase induces increased revenue, there is a lack of available substitute elsewhere, which shows that this is a relevant market that is 'worth monopolizing' by a hypothetical monopolist.⁴³ The SSNIP test is used both in abuse of dominance and merger control cases.⁴⁴ The larger the relevant market, the less likely dominance will be found in that market.

The particularities of two-sided markets have several practical impacts with respect to market definition. First, there is more than one market to examine, as there are two sides to the platform. Secondly, the tools used in traditional markets must be used with care, so as to account for the feedback effect between the two sides. The elasticities of demand of the two sides are intertwined, therefore a hypothetical increase in price on one side cannot be analysed in isolation to its effect on the other side. We will first analyse the definition issues in the two sides taken separately before turning to the tools used to define the relevant market of the platform as a whole.

3.1.1. Market definition on one side: the functionality offered to users (online search, social-networking)

We will consider the potential definition issues of the user side of the platform, first of the online search websites, and then of the social-networking websites. We will illustrate by focusing on the market leaders, Google and Facebook.

3.1.1.1. Online search.

From the user side perspective, Google provides a functionality for online searches, together with offering various functionalities, such as map services, email and messenger tools, as well as video service since its acquisition of YouTube. In this paper we focus our analysis on the search functionality offered by Google. A search engine is a "computer program that searches databases and Internet sites for the documents containing keywords specified by a user."⁴⁵ In its decision Microsoft/Yahoo! Search, the European Commission describes it as a

[A] tool designed to search for information on the Internet. It consists of a search box in which queries can be typed. The search results of a given query are then usually presented in a ranked list of results. The information searched for may consist of text (including news), maps, images, videos or other types of content.⁴⁶

⁴³ S. Bishop and M. Walker, *Economics of E.C. Competition Law: Concepts, Application and Measurement* (Sweet & Maxwell, 2009).

⁴⁴ In one-sided logic a number of caveats of the SSNIP test are identified: the cellophane fallacy, toothless fallacy etc, which do not touch upon the themes of this paper.

⁴⁵ Business dictionary online, retrieved 13/01/2012

⁴⁶ DG COMP, M.5727, para. 30.

From the user viewpoint, the 'search engine' offered by Google has as substitute all similar functionalities available to users on the web offered by other providers, such as Bing, Yahoo, Baidu, Ask and so on. Those general search engines must be distinguished from vertical search engines which focus

on specific segments of online content such as for example legal, medical, or travel search engines. Contrary to general Internet search engines, which index large portions of the Internet through a web crawler, vertical search engines typically use a focused crawler that indexes only web pages that are relevant to a pre-defined topic or set of topics.⁴⁷

The Commission also held that general search engines must be distinguished from search tools integrated into websites, which enable users to search for content within a website.

The search engine industry is highly concentrated. Looking at market shares, based on web traffic (views of a website), Google clearly leads its competitors.⁴⁸ Interestingly, Facebook appears in some market share rankings for online search, with 1.43% of market share for the US market.⁴⁹ Similar to many websites, Facebook integrates a search tool for users to find contacts or content. In addition, there is now a directory for contacts, places and businesses that is publicly available. It can be seen as a way for Facebook 'to challenge third-party search engines as the preferred way to find information about businesses. This is because advertisers are willing to pay higher prices to appear when users are making decisions about which local business or restaurant to visit.'⁵⁰ For now it seems that it would not be appropriate to place Facebook's search tool in the same market as general search engines, but the dynamics of such industry might well change this in the future.

Another aspect is whether there is a substitute available to users in the 'brick and mortar' market. This expression refers to the 'offline' version of a service offered on the Internet. Online search is very specific and inherent to the development of the Internet and to the information that is available. Search engine can be seen as providing a one-stop shop to services that may also be available offline, such as search engine rather than library for information research, searching for flights online rather than going to a travel agency and so on. This is of course not specific to online search, as the whole economy is increasingly populated by online counterparts of businesses. Therefore, from the user perspective there is no substitute to engine search in the 'brick and mortar' market.

Even if from the user's viewpoint, the 'product' seems to be all general search engines, from an antitrust point of view, it is incomplete to consider Google as

⁴⁷ Ibid, para. 31.

⁴⁸ Karmasnack (n 3).

⁴⁹ Ibid.

⁵⁰ Constine, To Complement Its Search Engine, Facebook Launches People, Pages, and Places Directories. Inside Facebook, available at: <http://www.insidefacebook.com/2011/09/28/facebook-launches-people-pages-and-places-directories-to-challenge-search-engines/> (retrieved 13/01/2012).

exclusively operating in the relevant market for online search. It ignores the other side of the platform, and the interrelations between both. In its decision, the Commission described the online search product, but correctly considered the relevant market to be in the field of advertising.⁵¹

3.1.1.2. Social-networking.

Social networking web portals, previously defined as providers of an array of means for users to interact and socialize with one another - messaging, email, pictures, videos, file sharing, blogging, discussion groups - can encompass many different type of web portals. Under this definition of social networking, Facebook has a leading position in the category, as it offers all the services described. Other websites offer a similar range of functionalities such as Google+, LinkedIn or Twitter. These websites are focused on the identity of people, and the interaction among them. Other social-networking websites may be more centred on specific interests, such as music or news, but there are no borders that can be drawn between different categories as most social-networking websites also enable people to connect via their specific interest.

As for substitutability, we leave aside for now the fact that the use of one website is not exclusive from the use of another website. We theoretically ask the question of choices available to consumers, should the access to one of the website be constrained. This might include the introduction of an access fee, or stricter registration requirement. What would happen if Facebook were to restrain access to a category of people, as was seen when it originally only provided access to the students of some American colleges? This is more than theoretical and does not really fit the SSNIP test, as not relating to a small increase in price, but this does give an idea of the concept of substitution we are using here. Some websites can fall under the definition of social-networking websites: Groupon, offering discounts, Amazon, the retail website, as well as YouTube. However, they appear to be only partial substitutes to social networking such as Facebook, as they only provide one part of its functionality. This view was adopted in the US case *LiveUniverse v. Myspace*,⁵² in which the District Court distinguished dating website from general social-networking websites. The Court concluded that MySpace operated in the relevant market for Internet-based social networking website. If their definition of social-networking seems appropriate, we don't subscribe to how the market is defined as not accounting for the two-sides of the market.

⁵¹ COMP, M.5727. We will examine below the details of the market definition.

⁵² *LiveUniverse v. Myspace* CV 06-6994 AHM, 2007 WL 6865852 (C.D. Cal. June 5, 2007). 'Internet connectivity services are not reasonable substitutes, because their primary function is simply to give users the ability to access the Internet. As to online dating sites, although they do have similar "organic, interactive qualities" to social networking websites, their dominant function and purpose is to enable users to meet potential dates. Online dating sites are not reasonable substitutes for social networking websites, because the latter websites have significantly more functions and appeal than do online dating sites. For example, social networking websites are used to get in touch with old friends and to keep current friends informed about what's new and exciting. Although social networking websites may also be used for dating, if MySpace suddenly were to shut down, its members would not fill the social void by turning to online dating sites. Instead, they would likely set up profiles on a different social networking website.'

Social-networking websites such as Facebook do not have counterparts in the 'offline' life. Many 'brick and mortar' businesses provide places where people gather and exchange according to their identity and interest. Those places may operate as a platform between different groups of users, and help internalise indirect network effect, as do social networking websites. However, social networking websites provide a very distinct experience to users, specific to their online nature. The means of communications are numerous and online-related. On top of this, Facebook provides various types of communication means that can apply to different segments: professional networking, hobbies, specific interest, charity management etc. In other words, Facebook has a potential to be used in relation with every dimension of peoples' lives, which can make it a large one-stop platform for users. Such equivalent cannot be found in the 'brick and mortar' market.

3.1.1.3. On the other side: advertisers

Both Facebook and Google earn their revenues from the other side of the platform they operate, namely advertising. Online advertising-based companies have already been the focus of competition decisions, in which market definition in the field was approached. A first set of issues in this respect relates to whether online and offline advertising, such as newspaper advertising, belong to the same relevant market. In the context of Google and search-based advertising, the question is also whether non-sponsored advertising can compete with sponsored ads.

Online and offline advertising pursue similar objectives, namely, to 'inform, persuade, remind or motivate consumers by delivering information, rhetoric, and/or imagery to those consumers.'⁵³ Every means of reaching the targeted audience has its own characteristics and offers different functionalities to both advertisers and users. The question is thus from an advertiser point of view whether the offline environment can be a substitute to the online? To what extent do both sides exert competitive constraints on each other? Would it be sufficient to group them in the same relevant market?

We will first consider the potential constraint exerted by online advertising on offline advertising. Before the rise of the Internet, online advertising had very little potential to constrain the more traditional and long-established means of advertising, such as radio, TV newspapers or 'snail mail'. The audience reachable online was too narrow, thus the advertisers had very little incentive to spend budgets towards online advertising. Nowadays, the Internet's audience is global, offering a great potential for advertisers. Internet advertising represented 10.6% of all advertising expenditures in the US, and was expected to reach 13.6% by 2012.⁵⁴ A shift in expenditure from newspapers to online advertising was expected to occur from 2007 to 2012,

⁵³ J.D Ratliff and D. L. Rubinfeld, 'Online Advertising: Defining Relevant Markets' (2010) 6 *Journal of Competition Law and Economics* 12.

⁵⁴ Norweb, 'Online Ad Spending Slows but Grabs Market Share.' Available at: <http://www.norwebpromotions.com/online-ad-spending-slows-but-grabs-market-share/comment-page-1/#comment-1278> (retrieved 14/01/2012).

accompanying a decrease in the readership of those newspapers.⁵⁵ These figures show that a shift from offline to online stems from a shift of the audience from offline to online media. This does not indicate on the substitutability between online and offline advertising, in the event an offline media raises its advertising prices. The constraint on price has been recognised in a US court decision, in which the alleged newspaper advertising market was deemed to be too narrowly defined because it did not include non-print media advertising.⁵⁶

As for the constraint exerted by the online market on the offline market, it seems that both will continue to compete. The decrease in newspaper readership is only one aspect of offline advertising as it includes also TV and radio; this part of offline advertising will evolve as being no longer a competitive constraint to online advertising. Some empirical studies approached the difficult question of substitutability. In the study '*Advertising Bans and the Substitutability of Online and Offline Advertising*', the authors analysed whether Internet advertising is more effective in places that prohibit advertisements for alcohol displayed on billboards.⁵⁷ By doing this, they are able to compare the effectiveness of online ads when there is no offline competition, with its effectiveness when offline competition is possible. The results show that offline advertising constrains the effectiveness of online advertising. The authors acknowledge that their study does not comprise any pricing dimension, but this still provides a robust result in terms of substitutability.

Another other study from the same authors, entitled '*Search Engine Advertising: Substitution when Pricing Ads to Context*' focused on search-based advertising, examining how offline advertising impacts the price of search-based advertising. In some US states, lawyers cannot contact by post a client victim of an injury before a certain period after the accident. During this time, competition between online and offline legal advertising can be deemed to be absent. The authors compared the prices for online advertising associated with the keyword "brain injury attorney Baton Rouge" with the price of an advertising related to the search "divorce attorney Baton Rouge". In the states with solicitation restrictions, the model shows that personal injury keywords were relatively more expensive to the price of other legal keywords, in comparison with the price gap between the same keywords in states without regulation prohibiting such contact. These results may not be fully consistent to define the relevant market for antitrust purposes, as the SSNIP test analyses the response to a small price increase, not to an access ban to the market. Therefore this study highlights the potential constraint effect of offline advertising on online advertising, as the price of online advertising is higher in the absence of offline advertising.⁵⁸

⁵⁵ J. D. Ratliff and D. L. Rubinfeld (n 53) 13.

⁵⁶ *Berlyn Inc. v. Gazette Newspapers*, 73 Fed. Appx. 576, 582-83 (4th Cir. 2003).

⁵⁷ A. Goldfarb and C. Tucker, 'Advertising bans and the substitutability of online and offline advertising.' (2011) 48 *Journal of Marketing Research* 207-227.

⁵⁸ A. Goldfarb and C. Tucker, 'Substitution between offline and online advertising markets' (2011) 7 *Journal of Law and Economics* 37.

The European Commission considered whether offline and online advertising could be in the same relevant market in various decisions.⁵⁹ In all its decisions, the Commission found a separate market for the online advertising. In *Telia/Telenor*, the parties submitted that from the demand-side perspective, companies did not exclusively advertise online, and that the advertising activity also encompassed the offline channels. The Commission rejected this statement, stating that this was related to the advertising strategy pursued by companies, to advertise via various channels. With *Google/DoubleClick*, the Commission distinguished the offline from online advertising markets because of the different characteristics of advertising through these channels: differences in potential scope of targeted audience and in the assessment of advertisements' effectiveness; different pricing mechanism as in online advertising prices connect the cost and the reach of the advertisement, which is not the case in offline mechanism. In establishing a distinction between online and offline advertising, the Commission failed to account for the potential competitive constraints and related substitution between offline and online advertising. However it is unlikely that the authorities will reverse their findings as such approach has been adopted consistently over past decisions.

We now consider another market definition issue, within the market of online-advertising: whether non-search advertising may constrain search-advertising. Search advertisements appear aside the organic search results, and are associated with keywords that the advertiser has selected. In contrast, non-search advertisements appear on a website without being related to a specific keyword. From the advertisers' viewpoint, search-advertising may seem to produce a more targeted advertising, and increase the relevance of advertising. Search engines can save keywords searched by a same user in the recent past. For instance Google now uses interest-based advertising, aiming to show ads relevant to the websites visited previously.⁶⁰ This enable to gather information about the needs of the user, based on the keyword search and on previous websites visited.

Non-search advertising may gather a great amount of information on viewers, which allow to achieve a targeting of equivalent efficiency. A website, on which non-search advertisements are displayed, attracts a segmented type of viewers with a specific interest, which is likely to correspond to a particular gender, age category. Geographic information can be inferred from the viewer's IP address.⁶¹ Websites which require users to register can collect even more detailed valuable information. Facebook is obviously one of those websites which gather a large amount of information, potentially on every dimension of a viewer's identity, activities and interests. From an advertiser's perspective, search-advertisements and non-search advertisements can reach a very targeted audience. They probably target the audience differently as a search engine has highly relevant information on the

⁵⁹ Case IV/JV.1 – *Telia/Telenor/Schibsted*, 27 May 1998, Case IV/M.1439 – *Telia/Telenor*, 3 October 1999 and Case IV/M.0048 – *Vodafone/Vivendi/Canal Plus*, 20 July 2000; COMP/M.4731 *Google/DoubleClick*, 11 March 2008 and COMP/M.5727 – *Microsoft/Yahoo! Search business*, 18 February 2010.

⁶⁰ <http://www.google.com/ads/preferences/html/about.html> retrieved 15/01/2012

⁶¹ J. D. Ratliff and D. L. Rubinfeld (n 53) 10.

searcher's current needs, and a social-networking website provides detailed information about the user's identity and interest.⁶²

With *Google/DoubleClick* and *Microsoft/Yahoo! Search business* the Commission approached such issues without reaching definite conclusions. In *Google/DoubleClick*, the market investigation showed that the different forms of online advertisements can constitute substitutes for the advertiser, as differences of technicalities and aims (brand awareness can be created by both types) between both tend to diminish.⁶³ The Commission also considered the supply-side substitutability to conclude that both channels of advertising were not likely to be part of the same relevant market. A publisher cannot replace space sold for non-search by space sold for search-ads, and vice versa. A publisher can integrate a search tool on its website and share profits with the search engine provider, but this does not fulfil the conditions for a supply-side substitution. Moreover,

[W]hen a publisher decides to allocate a given space on a web page to a non-search (e.g.display) ad, this would not be substitutable with a "search generated" advertising space, since the latter only appears on the page generated by the search query entered by the user.⁶⁴

In the corresponding decision in the US, the Federal Trade Commission (FTC) stated that search-advertising and non-search advertising could not belong to the same relevant market:

[T]he evidence in this case shows that the advertising space sold by search engines is not a substitute for space sold directly or indirectly by publishers or vice versa. Or, to put it in terms of merger analysis, the evidence shows that the sale of search advertising does not operate as a significant constraint on the prices or quality of other online advertising sold directly or indirectly by publishers or vice versa.⁶⁵

If the demand-side substitution is verified and the supply-side is not, still we can find a significant competitive constraint between the prices of search and non-search advertisements. The differences of technicalities originating from the differences of type of supply do not seem to be a crucial determinant of a relevant market as long as advertisers are ready to use them interchangeably in case of a small price increase. The current evolution seems to confirm this tendency.⁶⁶ Defining the search and non-search advertising as constituting one market has a significant implication: Google and Facebook potentially constrain each other, on the advertising side of the platform they operate. Market power of each of them would then drastically shrink under such definition.

⁶² Ibid 18.

⁶³ COMP/M.4731 *Google/DoubleClick*, 11 March 2008, para 52.

⁶⁴ Ibid para. 54.

⁶⁵ Federal Trade Commission, *Statement of Federal Trade Commission Concerning Google/DoubleClick*, (FTC File No. 071-0170) 3 and 7 (December 20, 2007) <http://www.ftc.gov/os/caselist/0710170/071220statement.pdf>.

⁶⁶ D Ratliff and D. L. Rubinfeld (n 53) 18.

3.2. Relevant market of the platform as a whole

Now that we examined market definition issues and their implications on each side of the platforms, we will turn to the question of the relevant market in which Google and Facebook, as platforms for two-sided markets operate.

The discussions developed above were necessary but insufficient in order to conclude as to the relevant market. Adopting a one-sided logic for a market definition in the case of two-sided markets is erroneous as it ignores that the platform operates with two-markets, whose prices and profits are linked. Economic tools usually used in competition enquiry are designed for the definition of single-sided markets, which may trigger an incorrect market definition in the case of two-sided markets. Some literature specifically analyses the caveat of the SSNIP test.⁶⁷ An application of the SSNIP test on the advertising-side of the platform ran by a search-engine will account for competing forces exerted by other publishers on the advertising space it sells. This relates to the discussion above. An increase in the price of the advertisements has a demand and a revenue effect: the increase diverts some advertisers from the search website to another type of publisher, while producing a gain in revenue from a higher price. The loss in advertising demand incurred has an impact on the user side. Users may want to switch to another search engine, which offers more advertising supply. In turn, the loss of users further decreases the demand of advertisers on the other side, as their advertisements now reach a narrower audience. Therefore, a price increase realised in the SSNIP test can be deemed profitable on the advertising side, but non-profitable if accounting for the two sides. Suggestions as how to adjust the test, at least in theory, are available in the economic literature. Noel and Evans provide a two-sided extension of the SSNIP test that involves starting with the platform as product and adding its closest substitute.⁶⁸ The price considered would be the weighted average of the price charged in two sides. At each step, prices across sides and across platforms would need to be optimised. However this can be quite complicated in practice, especially if more than two sides are accounted for.⁶⁹ In our situation, relying on the concept of price raises difficulties as one side uses the platform for free. We could easily imagine non-pricing elements that would divert the demand to another platform, but this might prevent the definition to rely on economic and numerical tools.

The critical loss analysis is a method used to apply the SSNIP test in a simpler way, depending on the data available.

It compares “Critical Loss” (CL) --the percentage loss in quantity of a hypothetical monopolist's products that would be exactly enough to make an X percent price increase in the price of all of its products unprofitable--to “Actual Loss” (AL) --the predicted percentage loss in quantity that the

⁶⁷ M. D. Noel and D. S. Evans, 'Defining Markets That Involve Multi-Sided Platform Businesses: An Empirical Framework With an Application to Google's Purchase of DoubleClick' (2007) AEI-Brookings Joint Center For Regulatory Studies, Working Paper; L. Filistrucchi, 'A SSNIP Test for Two-sided Markets: The Case of Media' (2008) Net Institute, Working paper.

⁶⁸ Ibid.

⁶⁹ M. D. Noel and D. S. Evans, 'The analysis of mergers that involve multisided platform businesses' (2008) 4 Journal of Competition Law & Economics 669-78.

monopolist would suffer if it did increase prices on all of its products by X percent. A relevant market is found when Actual Loss equals Critical Loss for a hypothetical monopolist of the given set of products in the proposed antitrust market. If Actual Loss exceeds Critical Loss, the relevant market is expanded to include more substitutes. Otherwise, it is contracted.⁷⁰

Noel and Evans conducted an empirical study so as to assess the potential bias in market definition using this tool with a one-sided rather than a two-sided logic in the context of the *Google/DoubleClick* merger decision in the US. They conclude that one-sided logic can lead to material errors in competition assessment. They also advise practitioners to avoid formalistic and systematic market definition in two-sided markets.⁷¹ In the case of the markets under consideration, the absence of a pricing element on one side of the market imposes to move away from too formalistic assessment.

Once the pitfalls of market definition are accounted for, we will turn to suggesting possible market definition. The relevant approach might be to identify the group of customers served by the platform, its likely rivals and then identify the various businesses that serve these customers. The notion of substitution must be part of the analysis, even though it does not rely on formalistic method underpinning the SSNIP test.⁷²

Both types of platforms interact with multiple businesses, but we accounted for the sides that are common to both: the user side and the advertising side of the platform. For each side, we assessed the competitive constraints and specific definition issues. We turn to examine the different possible way of defining the relevant markets.

As developed previously, it would be incorrect to define the platforms as the functionality they offer, namely online search and social-networking. Similarly, the advertising side of the platform cannot constitute a relevant market in itself as ignoring the user side of the platforms. In case of a merger control case, however, the market definition may confine to the advertising side if it is where the merging companies overlap, as it is the case in *Google/DoubleClick*.⁷³

Another way to look at market definition would be to combine both sides: Google would operate in the market for online-advertised based search engine, while Facebook would be active in the market for online-advertised based social networking website. However we have seen that the advertising side of both Facebook and Google are likely substitutes. Therefore it would seem difficult to apply a clear-cut distinction on competitive forces within online-advertising.

Finally, some interesting approach to market definition stems from how those platforms monetize their operations as it gives information on 'who the customers

⁷⁰ Ibid 668.

⁷¹ M.D. Noel and D. S. Evans (n 69) 40.

⁷² Filistrucchi considers conditions under which the 1-sided logic of the SSNIP test can be applied to 2-sided markets (n 67).

⁷³ COMP/M.4731 *Google/DoubleClick*, 11 March 2008.

are, whether there is competition, and whether the absence or potential absence of competition is a result of business acumen or anticompetitive conduct.⁷⁴ Both Facebook and Google monetize their operations in the form of advertising revenue. In the functionality we are focusing on, much of the operation consists in gathering and pooling information on users, relevant to the other side of the platform and to the platform as a whole.⁷⁵ Therefore, it would be useful to consider the relevant market to be in the area of 'monetization of users' information to advertisers'.⁷⁶ Competition authorities may seem unlikely define the relevant market as broadly as suggested here. However, this definition can help the authorities move apart from technology and technicalities considerations used in market definition, so as to focus on competition constraints, accounting for both sides of the platforms.

3.3. Contestability of the markets

In this section, let us assume that the relevant market is defined so as Facebook and Google have lead market shares in their respective markets or industries. This is likely to be the case in antitrust decisions for the time being. In that scenario antitrust concerns need to consider the contestability of the market in order to conclude whether they actually have market power. The assessment of market shares in isolation of barriers to entry; consumers lock-in etc. can yield erroneous conclusions. Market share calculation is only one of the elements used to assess market power.

3.3.1. Barriers to entry

A first element to assess is the barriers to entry to potential competitors. A market in which high profits are made has a potential to attract new businesses who want to get their share of the high profits. The barriers to entry in the search advertising industry seem high, not just because of the cost of developing the algorithm and underlying technology, but because of the cost of getting users on the platform. The indirect network effects are strong and therefore as each side of the market grows it gets more difficult for new entrants to compete. New entrants do not benefit from the same scope of indirect effects as the incumbents.⁷⁷ An entrant might be able to design a better algorithm and compete with Google, however Google's current lead position has been maintained over the last years, and dominance is not likely to be questioned in the on-going investigation.

The technology and resources to enter into the social-networking industry seem widely available. However the barriers to entry are high due to network effects of two types: on the user side, Facebook benefit from a strong direct network effect, as

⁷⁴ 'Intel, Apple, Google, Microsoft, and Facebook: Observations on Antitrust and the High-Tech Sector' Remarks of J. Thomas Rosch □ Commissioner, Federal Trade Commission before the ABA Antitrust Section, November 2010.

⁷⁵ 'The true product Facebook brings to the "market" is not its technology, but the social information about, and access to, its vast user base.' in C. Butts, 'The Microsoft Case 10 Years Later: Antitrust and New Leading "New Economy" Firms' (2010) *Northwestern Journal of Technology and Intellectual Property* 290.

⁷⁶ S.Weber Waller (n 28) 13.

⁷⁷ K. Laudadio Devine (n 35) 88-89; N. Zingales, presentation on Market Definition and Search Bias in Online Search and Advertising, 19th Competition Law Scholars Forum, January 2012.

more users trigger more users to join the platform. Facebook also enjoys indirect effect characterising two-sided markets as more users on one side induce more advertisers to join, with a positive feedback effect. However the social-networking industry is moving fast. Until a few years ago MySpace was the leader of the industry, also benefiting from network effects. We may see the emergence of a new social-networking company that would manage to find a powerful concept or technology to revert the tendency of Facebook's increasing position. One of the characteristics of the industries based on high innovation cost is that companies compete *for* the market rather than *in* the market. Therefore it is useful to assess dominance across time rather than at a precise point in time.

Search engines, (eg. Google) vertically integrate with the acquisition of content provider websites (eg. YouTube) that compete with other content providers such as social networks. Social-networking websites with high market shares, such as Facebook may hold a significant competitive advantage with having highly detailed and valuable information on users. Therefore, in the market for online advertising, if Google and Facebook are able to compete with each other, this would significantly reduce their market power on the online advertising market

3.3.2. Consumer lock-in.

Users on one side and advertisers on the other side do not use one but several websites, which is called multi-homing.⁷⁸ Users may use different social-networks or search engines and are likely not to constrain themselves to using one. Many Facebook users also frequent other social-networking websites, as they do not necessarily focus on the same segment. The use of several search engines may be less frequent amongst users.

On the advertisers side, companies are even more likely to use several and differentiated platforms to advertise. This may have positive effects for competitors with smaller market share that may benefit from the multi-homing strategies of advertisers.

Another specificity of these industries is the non-durability of choices. Unlike the choice of a computer or a mobile phone, a decision to visit a search engine or to register to a social-networking need not be durable as it is free to users. As a result 'lock-in is much less likely, particularly if multi-homing is possible.'⁷⁹ While 'competition is one click away', as Google says,⁸⁰ it seems that people remain loyal to the search engine they use. This is a matter of users' preference or 'laziness' which does not relate to an effective consumer lock-in. As for Facebook, the closure of one's account seems simply done, but it will be only deactivated to allow users to re-join at any time. Permanently deleting one's account entails a more difficult procedure. The deletion is active only after two weeks of deactivation, during which

⁷⁸ J.C. Rochet and J. Tirole (n 16).

⁷⁹ R. Schmalensee, 'Jeffrey Rohlfs' 1974 Model of Facebook: An Introduction' (2011) MIT Sloan School Working Paper 4893-11, 10.

⁸⁰ <http://www.google.com/publicpolicy/issues/competition.html>, retrieved 19/01/2012.

the user must not log in again, nor interact with its account on third-party websites.⁸¹ This can be perceived as a switching cost to users as the procedure is not as simple as just 'clicking away'.

Advertisers are also 'one click away' from other publishers. However, the network and positive feedback effects reduce the incentives to quit a very large platform, as they represent potential higher revenues than smaller platforms. An advertiser who appears in the top of the organic search result may have further reduced incentives to stop paying for advertising space if there is a doubt on the reliability of the algorithm. Google adjusts the algorithm to counter 'search engine optimization' firms that seek to optimize the rank of apparition of companies in the organic result by 'tweaking keywords and web design.'⁸² The search bias is a core question in the current investigation, however there is no evidence that Google manipulates organic search results at the moment.

4. Conclusions.

In online-search and social-networking platforms, the assessment of market power must account for specificities of two-sided markets, as well as to issues specific to each side of the platform. We concluded that for the user side of the platforms, Facebook and Google do not have 'offline' equivalents. On the advertiser side, the offline market has a potential to constrain the online market but this approach does not seem to be adopted by competition authorities. Within the online-advertising, the increasing substitutability between the non-search ads and search ads implies that Facebook and Google could theoretically belong to the same market. This would considerably reduce their market power and reduce antitrust concerns. It fits the idea that the relevant market may be constituted by all platforms attracting advertised-based revenues by monetising relevant information they hold on users. This approach shows how focusing on competitive constraints and substitution can help abstract from technology considerations for market definition purposes. Market power depends also on the existence of barriers to entry that must be put in perspective with the importance of network effects characterising those industries.

⁸¹ <http://www.wikihow.com/Permanently-Delete-a-Facebook-Account> retrieved 19/01/2012

⁸² J. Battelle, *The Search: How Google and its Rivals Rewrote the Rules of Business and Transformed our Culture* (Nicholas Brearley Publishing, 2005) in K. Laudadio Devine (n 35) 85.