

From Archie to Google - Search engine providers and emergent challenges in relation to EU competition law

Aysem Diker Vanberg [1]

Cite as: Diker Vanberg, A, 'From Archie to Google -Search engine providers and emergent challenges in relation to EU competition law', European Journal for Law and Technology, Vol. 3, No. 1, 2012

Abstract

Search engines are crucial for locating and accessing the vast amount of digital content. Hence they are subject to close scrutiny by the media, governments and scholars. On November 30, 2010, the European Commission opened an antitrust investigation into allegations that Google Inc. has abused a dominant position in online search in violation of Article 102 of the Treaty on the Functioning of the European Union (Article 102 TFEU). The investigation sparked an ongoing debate in relation to the potential for anti-competitive conduct by search engines, in particular the potential for abuse of dominance. Through an analysis of the history and development of the search industry, search engine business models and the characteristics of the online search market, this paper investigates whether the characteristics of the free internet search and search advertising market may encourage anti competitive behaviour. Furthermore, the Article briefly analyses whether the European competition framework, in particular Article 102 TFEU, is well equipped to deal with challenges in relation to search.

The paper advocates that due to the commercialisation of search coupled with innovative business models that change persistently, there is a growing potential for search engines to engage in anticompetitive practice. Hence, there is a vital need to reassess current EU competition law and policy.

1. Introduction

Search engines are crucial for locating and accessing the vast amount of digital content. Hence they are subject to close scrutiny by the media, governments and scholars. [2] On November 30, 2010, the European Commission opened an antitrust investigation into allegations that Google Inc. has abused a dominant position in online search in violation of Article 102 of the Treaty on the Functioning of the European Union (Article 102 TFEU). [3] The investigation sparked an ongoing debate in relation to the potential for anti-competitive conduct by search engines, in particular the potential for abuse of dominance. According to a February 2011 study by comScore, [4] 9 out of 10 Europeans use Google for online search, making it an undisputed dominant player in online search in Europe. [5] Given the significant importance of search engines for European consumers and businesses, the purpose of this paper is to analyse the suitability of the European competition framework, specifically Art. 102 TFEU, in relation to search engines.

This paper takes as a starting point that as pointed out by the competition commissioner, Joaquín Almunia, understanding the dynamics of web based services is a complex task due to innovative business models that change persistently. [6] The markets that search engines operate in are complex and different from traditional markets as they are fast paced, two-sided platforms [7] (matching paying advertisers and internet users looking for relevant information) characterised by economies of scale, high concentration levels, and network effects. [8] It investigates whether these characteristics of the free internet search and search advertising market may encourage anti competitive behaviour, and in the light of the above characteristics, whether Article 102 TFEU is well equipped to deal with challenges in relation to search. The paper first examines the development and characteristics of the search market. It then briefly explores the European

Commission's 2010 investigation into Google, the modernisation attempts in relation to Art. 102 TFEU and discusses whether Art. 102 TFEU in its current form is sufficient to deal with challenges posed by high tech industries, in particular search engines. Finally conclusions are drawn and an agenda for further research is laid out.

2. Development and commercialisation of search

Web search and the technology surrounding it have grown rapidly over the past decade. Wikipedia lists a wide range of search engines including 'general' search engines (Google, Bing and Yahoo Search), geographically limited search engines (Naver-Korea, Baidu-China), enterprise search engines (AskMeNow), legal search engines (Westlaw, LexisNexis) and so on. [9] Although there is a significant number of locally and globally operating search engines, this research will primarily focus on Google, due its dominance in the global and European consumer search market. [10] In two decades the online search industry has seen the rise and fall of many players.

Early days and development

The first search engine, Archie, [11] was created in 1990 by Alan Emtage, a computer science student at McGill University. [12] Compared to current search technology, Archie was rather primitive. Its search capacity and user interface was very limited and only used by academics. [13] Since Archie, a lot has changed in the landscape of search engines. In 1991, the World Wide Web became publicly available. [14] This development coupled with the constant innovation and technological advancement in search technology enabled search engines to reach ever larger audiences as opposed to limited academic audiences. As the World Wide Web grew in popularity and the number of websites increased, the need for a better search engine arose. [15]

In June 1993, Matthew Gray from Massachusetts Institute of Technology created the first web based search engine, the World Wide Web Wanderer. [16] The Wanderer sent out a robot txt file that collected information from websites and indexed it. [17] The web's second search engine, Aliweb was launched in November 1993 as a response to the World Wide Web Wanderer. [18] Aliweb did not use a web robot but rather depended on being notified by the webmasters in relation to the existence of each site as well information provided by them for the webpage to be listed. [19]

One of the most remarkable milestones in the history of search engines was the introduction of WebCrawler, by Brian Pinkerton, a researcher from the University of Washington, in 1994. WebCrawler was the first 'full text' crawler-based search engine. [20] Unlike its predecessors, it was the first search engine to index the full text of documents, and due to its user friendly interface, it extended the usage of search engines from tech geeks and academics to the general public. [21] Infoseek was based on existing technologies, but introduced a complex system of search modifiers and offered a few add-ons. Their success followed their strategic partnership with browser developer Netscape. [22]

AltaVista's search engine was developed by Digital Equipment Corp in 1994. [23] As described by Batelle, it was the 'first truly good search engine' as it brought many innovations and features. [24] Alta Vista indexed a larger number of web pages than their rivals and allowed natural language queries in addition to having advanced search options. [25] By the time Inktomi and Google became prominent players in the market, Alta Vista started losing its popularity due to management disputes and portal clutter. [26] On February 2003, Altavista was acquired by Overture Services Inc., which in July 2003, was bought by Yahoo. [27] [28]

Lycos was the next major development in search. It was launched at Carnegie Mellon University by Dr. Micheal Mauldin in 1994 [29] and like Altavista, it sent a crawler to index the web. Lycos, however, used more advanced mathematical algorithms in responding to search queries. [30] To assess the relevance of a webpage it analysed the outbound links on a Web page. [31] But Lycos' main advantage over its rivals was mainly the size of its catalogue. [32] Excite was launched by a number of Stanford alumni in 1995. With both a web directory and a search engine it was the first search engine 'to transcend classic keyword based searching with technology that grouped web pages by their underlying concepts'. [33]

As rival search engines were creating variable results, meta search engines entered the scene in 1995. [34] Meta search engines such as Metacrawler and Sawy sent search queries to all leading search engines and indexed and ranked them. Hotbot developed by Inktomi Corporation came about in 1996 and

was a milestone in the history of search through the introduction of personalised search. It used cookies to store personal search preferences in order to offer customised search results. [35] Furthermore, they were the pioneers of the pay per click model, but as their business model lacked in efficiency it was not profitable. [36] By 2000 the majority of leading search engines, including AltaVista, the prominent search engine of its time, launched customised search. Customised search enabled search engines to collect vast amount of data from their users which could be used for behavioural targeting for advertisers.

Yahoo! was created by two Stanford graduate students, David Filo and Jerry Yang, during their PhD studies. [37] Unlike other search engines, Yahoo began as a web directory. The yahoo.com domain was registered on January 18, 1995. [38] On April 5, 1995, Yahoo raised \$2 million from Sequia Capital's Michael Moritz, who later provided finance for Google. [39] Understanding the critical importance of search for internet users, in 1995, Yahoo! included search to its directory through its partner Open Text and later that year switched to Altavista. [40] Yahoo! later started using Inktomi technologies and finally moved on to Google as search partner. [41] To create its in-house technology, starting from 1997, Yahoo! acquired a variety of search companies including Netcontrol, hotjobs.com, Inktomi, Overture and SearchFox. [42] After having bought Inktomi in December 2002 and Overture in July 2003, Yahoo! combined these technologies with various other companies it acquired and started using its own in house search technology February 2004. [43]

Yahoo! eventually diversified into a web portal offering a wide range of services in a bid to increase traffic and time on site. Currently the Yahoo! portal offers a variety of services, including but not limited to e-mail, shopping, dating, services as well as content such as news, entertainment, and sports information. [44] In 2008, Microsoft offered to buy Yahoo!'s search business for over \$40 billion, a deal which was refused by the Yahoo Board of Directors. [45] Yahoo and Google tried to join forces in 2008, but the US Department of Justice (DOJ) informed the companies that it would file an antitrust suit in order to block the deal due to its anticompetitive implications. [46]

Commercialisation of search

From the early days, search companies tried to commercialise search through the use of banner ads, however commercialisation of the internet and search as we know it today started after 1995. [47]

Overture

Overture, formerly known under the name GoTo launched by Bill Gross in late 1997, was the first company that truly succeeded in commercialising search. [48] Unlike traditional search engines in Overture, when users searched for information on products and services by key word the results were organised not based on an impartial crawler algorithm but rather on the amount that that an advertiser of the product was willing to pay for the keyword. [49] Unlike the business models of rivals GoTo's model secured that the advertisers only pay when somebody clicks on their ads, which now the standard in search advertising market. [50]

Gross was criticised for not being ethical but he debuted these arguments by stating that Overture was similar to commercial telephone directories and due to its transparency consumers clicking his website will be well aware that it is a commercial search engine and they would be informed of which advertisers are paying for which keyword, consequently visiting Overture with the intent of purchasing. [51] A syndication deal with AOL was a breakthrough for Overture. Under the agreement Overture was going to pay AOL a significant amount to syndicate Overture's search listings on AOL's website and would make its profit from the traffic that AOL sent through the Overture listings. [52]

Although it was a major success in paid search, Overture would never enjoy the leading position in the search market Google eventually did. The largest underlying reason was that due to their fear of losing advertisement partners, they avoided growing in to a pure search destination and lacked their own traffic, making them very reliant on their partners. [53]

Trying to win some power as a pure search destination, in 2003 Overture bought Altavista and AlltheWeb, a European search company with notable technology. [54] However these moves were not enough to help the company compete with its rivals. On July 14th 2003, Overture was acquired by Yahoo for \$1.63 billion. [55]

Google

Google was incorporated by Sergey Brin and Larry Page in 1998. It was rather a late entrant to the search engine market. However, it became a major success and a leading search engine due to its unique algorithm - PageRank [56], that relied upon the reputation of websites to produce better results than existing search engines. Existing search engines ranked results according to the number of appearance of a search query on a certain web page, which affected the quality of search results. [57] Google's better and user friendly organic (non paid) results increased its popularity and by 1999, Google was processing seven million searches per day. [58]

When they founded the company in 1998, Brin and Page were against the model of advertising funded search engines as they believed a search engine funded by advertisers would be biased towards the advertisers rather than addressing the needs of their users. [59] They hoped their main revenue would come from licensing their search technology, however in their early days no one was interested in paying for a license. [60] As they needed a source of income, in 1999, Google compromised and started placing text ads labelled 'sponsored links' alongside organic search results. [61] In October 2000, Google launched AdWords, its text-based ad placement product. AdWords allowed advertisers to select the key words they wanted to be associated with. [62] Google then altered AdWords to operate on an auction based pay per-click model which was adapted from a model introduced by GoTo (1997) [63], an earlier and truly commercial search engine. In addition to GoTo's model, Google introduced a new concept, Quality Score, which determines the relevance of the keyword to the ads in its ad group based on historical click through rates on ads. [64] In other words, The Quality Score determines whether an ad is to be displayed by Google and the ranking of it. [65] When two advertisers are using the same key words, the site which has a lower Quality Score will have to offer a higher price to rank at the same place. [66] Google's main revenue is now generated by advertising. Google's total revenue was USD\$ 29,321 billion in 2010, of which total advertising revenues was USD\$ 28,236 billion. This demonstrates the critical importance of advertising in search. [67] Google also generates revenue through 'AdSense'. Website owners enroll in this program to enable text, image, and video advertisements on their websites which is managed by Google, they get a share of advertising revenues for ads clicked when triggered based on relevance to their content.

Microsoft

Microsoft was founded by Bill Gates in 1975 and due to its aggressive marketing of MS-DOS it quickly became a leading software seller in the home computer industry. [68] In 1985, the first version of Microsoft Windows was released, which was followed by the release of Microsoft Office in 1989, the business operating system Windows NT in 1999, and a web browser, Internet explorer, in 1995. [69] Despite being a prominent player as an operating system for personal computers, it took Microsoft a relatively long time to see how profitable the search business is. Microsoft launched MSN Search in 1998, however they did not develop their own search technology until 2004 and depended on partners such as Overture, Looksmart and Inktomi and Yahoo. [70] In 2005, MSN officially switched from Yahoo organic results to using their own technology. [71] On September 11, 2006 Microsoft released Live, which offered a simpler user interface as well as Microsoft's own image search technology, which was previously offered by a third party, PicSearch. [72] In July 2009, Microsoft launched Bing, a new search engine that they advertised as a 'decision engine'. [73] The most significant feature of Bing was organising search results into categories. As an example, in a search on Obama, one can see the information categorized as content types such as images, speeches, videos or biographies of Obama. [74]

In order to have better chances in competing with Google, Microsoft and Yahoo decided to join forces. [75] In July 2009 Microsoft and Yahoo announced that they had made a 10 year deal, in which the Yahoo search engine will start using Bing's technology while in exchange Microsoft will receive 12% percent of revenues on search related revenues. [76] The deal was cleared the same day by the DOJ and after a phase one review by the Commission. [77] The agreement between Yahoo and Microsoft can be seen as a genuine alternative to Google, but it may fail as even their joint effort may not be adequate to effectively compete with Google given the characteristics of search. The success and survival of search engines have been heavily based on the relevance of search results and their advertising model. Google initially came to dominance due to its relevant search results that attracted consumers to its platform combined with their innovative ad serving technology. This position was then further strengthened due to characteristics unique to the search industry, and it is likely to remain the case for the near future.

3. Characteristics of the search market

The term 'the new economy' is generally used to describe the manufacture of computer software, internet-based businesses (internet access providers, internet service providers, Internet content providers) and communications services and equipment designed to support the first two. [78] Doubtlessly, search engines operate in the 'new economy'.

As noted by Posner;

'New economies are characterized ... by falling average costs ... over a broad range of output, modest capital requirements relative to what is available for new enterprises from the modern capital market, very high rates of innovation, quick and frequent entry and exit, and economies of scale in consumption (also known as 'network externalities'), the realization of which may require either monopoly or interfirm cooperation in standards setting.' [79]

Most of the above characteristics, such as high rates of innovation, economies of scale and network effects are applicable to the search industry. Arguably some of the above such as the modest capital requirement as well as quick and frequent entry are no longer relevant in the context of search.

An innovation-driven industry

Search engines operate in innovative markets, in which a certain level of innovation is required to enter and survive in the market. In order to set up a search engine that could be a real substitute to state of the art search technology that Google has, a new entrant would need to demonstrate and sustain a level of innovation which is higher than current industry standards, a standard that can arguably only be achieved with the brightest minds in the industry, using scarcely available resources. The pace of the industry demands existing search engines to constantly invest in the improvement of their technology.

Fast moving markets

The fast rise and fall of search engines such as AltaVista in a relatively short time frame demonstrates the need for fast legal processes. The life cycle of AltaVista alongside the duration of the Microsoft cases shows that investigations in relation to anti competitive conduct in high tech industries may drag out for so long that the outcome may be irrelevant for the involved parties by the time a conclusion is reached.

Economies of scale

Developing and operating new search engine like Google requires significant capital investments as well as extensive research and development. In 2007, Gartner Group reported that Google has more than 1 million servers and spends 200 to 250 million US dollars a year only on IT equipment. [80] This alone demonstrates the magnitude of the investment and the economies of scale that Google enjoys which are very difficult to match for a new entrant. Furthermore, new entrants to the market need the distribution and marketing channels to penetrate the market. [81] Hence, in high tech industries, such as the online search market, significant market power is deemed necessary to compensate for the high fixed costs and high risk associated with the investment. [82] For this reason, the search market and related markets such as the search advertising market tend to be highly concentrated.

High concentration levels

As stated in the 2010 OECD Report on the Economic and Social Role of Internet Intermediaries, the global search engine market is a market with high concentration levels with only top five companies accounting for over 90% of the market. [83] According to comScore data as of December 2009, these five players include Google with 64% market share, Yahoo with 14% market share, (Chinese) Baidu with 13% market share, Microsoft 4% percent and finally (South Korean) Naver with 2%. [84] In the EEA Google is by far the dominant actor in internet search and online advertising. As acknowledged in the European Commission's 2010 clearance decision on Microsoft's proposed acquisition of the Yahoo search business, Microsoft's and

Yahoo's activities in internet search and online search advertising are very limited with combined market shares generally below 10%, whilst Google generally enjoys market shares above 90% in the EEA.' [85]

Multisided platform with strong network effects

As David Evans [86] puts it, multi sided platforms are not a new phenomenon, however they have only been analyzed as a specific type of business in the 2000's starting with the work of Rochet and Tirole. [87] A multi sided platform is an intermediary that brings together two or more different groups of customers on the same platform. [88] These platforms present a value to one group of customer if the other group of customers exist. The two distinct groups of customers using these platforms are customers who need or rely on each other in some way. [89] Dating sites and social networking websites are classical examples of multisided platforms. As the number of their customers increase, more customers will consider to sign up for their services.

Through the progress of information technologies the occurrence and significance of multisided platforms have grown. [90] The first wave of development in this area was in 1980s where due to the cost reductions in micro processors and the mass production of computer software, various software platforms bringing application developers and hardware makers together emerged. [91] The second wave came after 1995 by the commercialisation of the internet; examples are advertising platforms (Google, Yahoo), transaction platforms (eBay and Amazon), social networking platforms (Facebook and Myspace) as well as various other players. [92]

Evans and Schmalensee [93] argue that the common and basic functions of multi-sided platforms are as follows:

- They serve as matchmakers by facilitating exchange between different group members;
- They build audiences making it easier for people looking for a suitable match,
- They offer efficiency and reduce costs as they provide shared sources.

Most of the multi-sided platforms concentrate on either one or all of these functions. [94] One of the biggest problems of such platforms is to solve the chicken and egg problem; if they do not have enough customers on side A, they cannot attract the customers from side B. [95] It can rather be observed that there is always one side, which is deemed to be more crucial to the platform that gets a better deal. The service offered may be offered for a small fee or without any fee. [96] It has been demonstrated by economists that to maximise their profits multi sided platforms can charge a customer group less than the incremental price or even less than zero. [97] In the case of Google search, consumers who search for results do not pay Google, [98] as it is the advertisers who pay to appear in the search results. [99] Maximising profits in a multisided platform is more complicated than a traditional business as the platform must find a balance between different demands and interest groups. [100]

Multi sided platforms often rely on indirect network effects. [101] Network effects, also known as network externalities, is an economic theory which is increasingly becoming important in legal arguments. [102] According to Katz and Shapiro, network effects can be observed when consumers of a product experience increased value when other consumers also use that product. As a classical example, the more people have a fax machine, the more value it has as each fax owner can communicate with more users. [103] Markets with network effects are also often prone to convergence, as when an industry standard is developed and more and more people use it, the others cannot afford to not be left out. [104] Needless to say, network effects may contribute to a firm to rising to dominance and keeping this position. The Microsoft case is a noteworthy example which demonstrates the link between network effects and market dominance. [105]

Internet based businesses, in particular social media, networking websites and search engines are also generally characterised by network effects. If we take the example of Google, Google's early success was due to its novel and unique search technique that produced highly relevant results to search queries; however Google's popularity increased as more and more searches were conducted. [106] The more people use Google search, the more data the company obtains and as the data is its raw material, the more data the company has, and the better search results it can deliver. Better search results will doubtlessly mean more search users and more scale for Google, which further improves its search results, creating a self-boosting feedback loop. [107] As the number of users that use Google for search increase, the number of advertisers

on the other end increases as they can reach a greater audience, which again reinforces the value of the multi sided- platform. [108]

High switching costs

Search engines often claim that their business model is transparent, that entry barriers are rather low as one can easily set up a new service and that customers can easily switch to new providers. As Google often puts it competition is one click away. [109] Doubtlessly, there is more competition for consumers when they can switch from one provider to another or use both of them at the same time. [110] As there are no technological barriers to switch from one search engine provider to another switching may seem relatively easy.

Nevertheless this argument may have some weaknesses. First of all it is a well known feature of multi-sided platform to lock in customers. They can do it by offering exclusivity agreements as well as bundling and tying their services. With the advent of cloud computing, search engines have become more than mere search tools as they have started offering a plethora of online tools and became online platforms integrating search as functionality. Hence it may well be argued that for a customer who uses not only Google search, but a bundle of other services offered by the search engine platform, (such as Google chrome, Gmail, Google documents) switching to another search engine is harder. Doubtlessly, customers who opt out from using Google search can still have access to their G-mail account but due to practical reasons such as habit and familiarity, it is more convenient for a consumer to use all the services offered by the same platform. Data portability is indeed another important consideration in this respect as it may hinder customers from switching platforms. Customers may easily switch between search engines but if they abandon a platform they may risk losing important private data such as bookmarks, email communication or photos stored in the platform.

Furthermore, informed consumers will know that Google may produce better results based on its intimate knowledge of their search history as well as behavioural data. Hence consumers may choose to stay with their current search provider as they would benefit from a more personalised search experience with their existing provider. In the light of above characteristics it might be argued that unless a disruptively innovative company, with high investment capital that emerges, the search market is likely to be dominated by Google.

Challenges to competition policy

Due to the characteristics of the search market specified above, search engines may engage in anticompetitive conduct. The ongoing 2010 Commission investigation into Google affirms this position. Search engines may try to lock in customers and advertisers as well as engage in tying and bundling practices which might have the effect of foreclosing the online search market to new entrants, hence having anti competitive effects. Network effects and economies of scale further acts as entry barriers for new search firms and solidify Google's dominance. Standard competition rules tailored to the needs of a traditional economy may not suit the dynamic fast paced and multisided nature of the high tech industry [111] in particular online search industry. Hence, the rules applied to the assessment of competition in high tech markets may have to be adapted to reflect the dynamic nature of competition and the significance of innovation in these industries. [112]

The 2010 Commission investigation in to Google

In February 2010, Foundem (a UK price comparison website), Ciao (a German shopping site owned by Microsoft) and ejustice.fr (a French legal search engine) filed a complaint before the Commission. These three complaints focused on abuse of dominance: that Google used its dominant search engine and its Universal Search Service [113] to promote its own services whilst discriminating as well as demoting the search ranking of competing websites and other specialised (vertical) search engines in its organic and paid search results. After having investigated the preliminary submissions by the parties, on the 30th November 2010, the Commission decided to open a formal investigation into the allegations that Google has abused its dominant position in online search. [114]

In the scope of this investigation the Commission investigates;

- whether Google has imposed exclusivity obligations on advertising partners, hindering them from placing certain types of competing adverts on their web sites, as well as on computer and software vendors with the aim of foreclosing competition for competing search tools,
- whether Google has restricted the portability of online advertising data to competing online advertising platforms.

The investigation was broadened in December 2010, when complaints by three additional companies were added to the file as Bundeskartellamt, the German competition authority, transferred to the Commission a part of its investigation that overlapped with that of the European Commission. The complaints to the Bundeskartellamt were made by BDVZ and VDZ, two newspaper and magazine associations, and the online mapping company Euro-cities. These complaints were about the preferential treatment of Google's own services. [115]

On March 30 2011, Microsoft also issued a formal complaint with the European Commission. [116] In their complaint Microsoft alleged that:

- Google is using technical measures to stop Microsoft's search engine from indexing content on YouTube, which is owned by Google,
- Google is blocking Microsoft smart phones from operating with YouTube,
- Through Google books it is controlling access to online copies of out of copyright books,
- Google limits the ability of advertisers to move their own advertising data to competing advertising platforms,
- Finally, Google contractually hinders leading Web sites in Europe from distributing competing search boxes.

According to Reuters, Google face nine formal complaints at the time of writing. [117] The increased number of complaints does not necessarily mean Google is abusing its dominance however it means that the scope of the investigation may be broadened further. The European probe in relation to Google's anticompetitive conduct is not the only one. In June 2011, the U.S. Federal Trade Commission (FTC) opened an antitrust inquiry into Google's search and advertising activities. [118] The Attorney General of Texas opened an investigation in 2010, which is still ongoing [119], whilst a similar antitrust complaint against Google in Ohio was dismissed in September 2011 as the Court stated that the complainant has only proved harm to itself and failed to show harm to competition. [120]

While no definitive findings have been made as to whether Google is dominant or not, there are a strong number of indications in the Microsoft/Yahoo Search Business decision [121], suggesting that Google is very likely to be found to have a dominant position on several markets including online search and search advertising. [122] Hence, the question as to whether Google is dominant in certain markets is not dealt with in this article. In the light of the above allegations, the potential harm to competition can be broadly grouped into the three categories discussed below.

Harming downstream rivals by manipulating search and by giving preferential treatment to its own services

This is the most commonly heard and arguably the most intricate complaint brought against Google. Complainants including specialised search engines and website owners claim that users of Google's search engine rarely look beyond the first few page of search results and that a lower placement on Google's organic result due to preferential treatment given by Google to its own products, or not appearing at all due to being banned by Google, has a significant impact on the level of traffic to the listed site. Hence they claim that due to manipulation of search results and Google's preferential treatment the online markets are foreclosed to rivals and new entrants ultimately leading to less choice for consumers.

Foundem, one of the complainants to the Commission, gave concrete examples from two different markets where it alleged to be adversely affected by Google's preferential treatment to its own services. Their first example is in relation to the online map market; within two years after the introduction of Universal Search, Map Quest, a leading US based online mapping service provider, lost its leading position in the market as the traffic to its website diminished, whilst the traffic to Google Maps increased significantly. Their second example is in relation to the product comparison market. After the inception of Universal Search, Google's market comparison product which had been largely unsuccessful, started to grow rapidly. At the same time

visitors to UK's leading product comparison websites decreased dramatically. Foundem submits that Google's conduct in relation to those markets is anticompetitive as it has a foreclosure effect for rivals thereby reducing consumer choice and welfare.

Search engines claim that they strive to provide the most relevant search results without bias or manipulation. They often maintain that there is no human intervention to their algorithms as they have an automated algorithm. However it is a well known fact that search results can be manipulated by search engines themselves as well as by information providers. [123] In the context of search results one must bear in mind that even the most automated search engine is a result of human work and beyond every algorithm there is a programmer giving specific instructions to the computer. [124]

It seems straightforward to establish whether a search engine favours its own services. For example if Google shows only YouTube (owned by Google) results when you enter a search term such as 'video', you may arrive at the conclusion that it favours its own results. However given the secrecy surrounding algorithms, it is difficult to establish whether such ranking is unfairly favouring its own site or is entirely fair - one site could simply be of a higher quality or better promoted. Some suggest that just like retailers that give their shelves to their own-brand products; search engines should be able to favour their own products and services and this does not raise any competition issues. However as Marsden points out, this is a problem, if such preferential treatment is not done transparently. [125] If search results are based on anything but quality, then this should be clearly communicated to the user, as it is with paid results and own-brand products of retailers. [126]

Arguably, there are two significant complexities in relation to the manipulation of search results in the antitrust context. First, given the secrecy around algorithms it seems very difficult to establish with clarity whether such manipulation has taken place with the aim of discriminating rivals. Secondly, even if the existence of such bias could be proven, finding an adequate remedy that does not affect the competitive structure of the industry seems challenging. A commitment by search engines to provide more objective results will maintain the status quo, whilst more interventionist measures such as regulating and monitoring search results with a view to ensure objectivity may well reduce their quality. Furthermore, even if it's decided that regulating and monitoring search results is a viable option, the scope and objectives of such regulation and monitoring, as well as determining the authority that will be in charge of this seems to be highly contestable issues.

Harming other search engines by denying access to content

Other allegations against Google focuses on denying or limiting rivals access to its own content, thereby adversely affecting rival search engines' ability to provide the quality of results Google can provide. Unlike its early days, Google today is not only a search engine provider. Google owns a considerable amount of content as diverse as online books, video, music, travel and social media. It can be problematic if other search engines cannot access or receive limited access to this content.

Without delving into the details of the landmark Microsoft case (Case COMP/C-3/37.792 Microsoft), [127] the following analogy can be drawn between the Microsoft case and the Google investigation. When Microsoft refused to provide computer protocols that would have enabled rival operating systems to interoperate with Microsoft's Windows personal and server operating systems, it was found as an abuse of dominance. [128] In the same vein, it can be argued that the walling of access to content and data can be perceived as abuse of dominance, as such conduct potentially hinders competitors from providing quality search results, and consequently from competing with Google on an equal footing. Similar to manipulation of search results, in relation to denial of access to content claims, a key challenge lies is finding the appropriate remedy. If it is established that Google's denial to grant access to its own content have a substantial effect on rivals offerings, thereby eliminating consumer choice, the Commission may decide to intervene and mandate access for rivals, as evidenced in its past decisions in a number of industries such as telecommunications, transport and financial services. [129] However, if such a remedy is foreseen by the Commission, the viability and scope of such mandatory access will be highly disputed as such access to Google's content and platform might give its rivals access to strategic assets (such as social network member data), insights in relation to its inner workings and even to its protected algorithm.

Harming competition through exclusivity deals

As discussed above search is characterised by economies of scale. Search engines can obtain scale by buying user data through exclusivity deals with other operations such as websites with a large number of followers, social media, other forms of content and even popular search engines in other markets. [130] The acquiring service runs searches on, or for the service, and ultimately benefits from the resulting user data. [131] As discussed earlier, this data, combined with the data obtained from its own search operations, allows search engines to provide better search results through greater scale. The crucial question is whether acquisition of such scale has a foreclosure effect for rivals.

It seems straightforward to establish whether Google places exclusivity obligations on its partners. However, exclusivity in itself may not necessarily lead to anticompetitive conduct. Exclusivity agreements can be tolerated as long they enhance efficiency and their exclusionary effects do not deny rivals market access for too long. [132] Hence in this context, critical questions that need to be addressed are whether such exclusivity deals have a substantial effect on competition and consumer welfare and whether there are any efficiencies derived from such exclusivity agreements that could override potential foreclosure effects. The Commission's approach towards efficiencies, its definition of what constitutes foreclosure in online search, and its determination as to the length of tolerating such foreclosure will determine the answers to these questions.

A brief comment on the investigation

The European investigation is ongoing at the time of writing and as acknowledged by the competition commissioner, Almunia, in September 2011, the two-sided and complex nature of search business is forcing the Commission to take special care when conducting relevant product and geographic markets analysis. [133] Due to its complexity and resemblance to the Microsoft cases, it is expected that the investigation will keep academics and the Commission busy for a while yet. The increasing reliance on settlement procedures suggests that the investigation will most probably not proceed to an infringement decision.

The key challenges for the Commission in their investigation will be to assess whether the alleged conducts by Google has any foreclosure effects, whether such foreclosure can be justified by efficiencies and whether such conduct has any actual or potential effect on consumer welfare. As discussed above, if the case is settled by commitments or if the Commission finds that Google has abused its dominance, designing effective remedies that strike a balance between addressing the competition problems whilst not harming and intervening excessively with the innovative nature of search, is a challenging task. Independent of its outcome, the investigation affirms the position that there is at the least a potential for search engines to abuse their dominance in online search, search advertising and other relevant markets. This opens the debate in relation to the applicability of Art. 102 TFEU to deal with anti-competitive conduct by search engine providers.

4. Is Article 102 TFEU sufficient to deal with challenges posed by search engines?

Article 102 TFEU prohibits undertakings from committing an abuse of a dominant position held within a substantial part of the internal market. The current application of Article 102 TFEU may however not be ideally suited for dealing with dynamic industries like search engines. It has been criticised for not being based on sound economic analysis, economic effects, being inefficient and for protecting competitors instead of the competition. [134] The Commission's 2005 Discussion Paper [135] and the long awaited 2008 Guidance on enforcement priorities [136] have aspired to move Art 102 TFEU towards a more effects based approach, relying on the actual effects of allegedly abusive behaviour rather than the form of behaviour. However such reform was rather ambiguous and inadequate for incorporating efficiencies. [137] As noted by Damien Geradin, the practical impact of the Guidance is questionable. [138] Although the Guidance Paper provided dominant firms a series of principles enabling them to better self assess the legality of their practices which might fall under Art. 102, the exceptions and caveats it contains limited its scope to a great extent. [139] Unlike Art. 101, Art 102 still lacks safe harbours, [140] and does not sufficiently allow efficiency claims which are crucial in dealing with innovative industries such as search. [141] Furthermore, it still

remains to be seen to what extent the Commission and the community courts will be applying the effects based approach in future competition analysis. [142] Due to the high investment costs associated with search, a search engine provider needs legal certainty and assurance that if certain conditions are fulfilled they are exempt from antitrust interference.

The innovative and fast paced nature of the search industry calls for speedy, and if possible ex ante solutions to competition problems. However as pointed out by Posner an antitrust case involving high tech industries might take so long that given the fast paced nature of the industry the decision itself may become irrelevant and ineffectual. [143] By the time the Commission and the courts finalise the case, the company in question may already have lost its dominant position, or the complainant may no longer exist. Furthermore, due to the complex nature of the search industry from both a technological perspective, the Commission may need the expertise of industry specialists, contributing further to the length and costs of proceedings. The length and controversial nature of the Microsoft cases in the USA and in the EU affirms these positions and open the debate for alternative approaches in dealing with competition problems in high tech markets.

5. Conclusion

The analysis of the development and characteristics of the search industry demonstrates that the search industry, including online search and search advertising markets, is a highly concentrated market with only a few players enjoying significant market power. Furthermore, due to the commercialisation of search coupled with the characteristics of the search industry, there is a growing potential for search engines to engage in anticompetitive conduct within the context of Article 102 TFEU. Google initially came to dominance due to relevant search results that attracted consumers to its platform and due to their innovative ad serving technology. This position was further strengthened by network effects and other characteristics specific to the search industry. Arguably, Google is likely to remain dominant unless a disruptively innovative player with significant financial strength emerges.

Consequently it is a pressing concern to determine whether Google abuses its dominance in online search and other relevant markets, whether there is a potential or incentive for it to do so in the future, and if that is the case how this should be addressed. Given the characteristics of the online search market, Article 102 TFEU and its traditional application as evidenced in the Microsoft cases may not be ideally suited to deal with problems posed by search. Criticisms such as ambiguous guidance, lack of sound economic analysis, the length of the proceedings and the questionable effectiveness of remedies still prevail. Due to the nature of the search industry there is a need to ascertain if and how Article 102 TFEU should be revised or applied to more effectively to address competition problems posed by search. In this respect, there is a need for further research and discourse to determine the types of anticompetitive conduct that search engines may exhibit in the scope of Article 102 TFEU and what remedies would be effective if such abuse was to take place. Further research is suggested to establish whether alternative approaches such as sector specific regulation, co-regulation or a specialised agency dealing with internet based businesses could more effectively deal with anti competitive conduct in online search.

[1] Aysem Diker Vanberg is a PhD candidate at the School of Law, University of Essex, England.

[2] A fast growing number of scholars have written and are writing about the regulation of search engines. See e.g., van Eijk, Nico 'Search engines, the new bottleneck for content access', in Telecommunication Markets, Drivers and Impediments, (eds.) B. Preissl, J. Haucap & P. Curwen, Springer, London, 2009; Grimmelman, James Taylor Lewis 'The Structure of Search Engine Law', New York Law School Public Law and Legal Theory Research Paper Series No. 06/07-23, 2007; Pasquale, Frank A. and Bracha, Oren 'Federal Search Commission? Access, fairness and accountability in the law of search', 93 Cornell Law Review, 2008; Gasser, Urs 'Regulating Search Engines: Taking Stock and Looking Ahead', Yale Journal of Law & Technology, Vol. 9, 2006.

[3] See European Commission Press Release, Antitrust Commission probes allegations of antitrust violations by Google IP/10/1624 dated 30/11/2010. Available from: <http://europa.eu/rapid/pressReleasesAction.do?reference=IP/10/1624&format=HTML&aged=0&language=EN&guiLanguage=en>.

[4] comScore is an independent digital marketing service. With approximately 2 million worldwide consumers under continuous measurement, the comScore panel is designed to accurately measure people and their

behaviour in the digital environment, Comscore report is available from: http://www.comscore.com/About_comScore/Methodology.

[5] See comScore Report: Europe Digital Year in Review 2010, dated February 2011, available from: http://www.comscore.com/layout/set/popup/request/Presentations/2011/2010_European_Digital_Year_in_Review_PDF_Request?req=slides&pre=The+2010+Europe+Digital+Year+in+Review.

[6] Speech 10/365, Joaquín Almunia, 'Competition in Digital Media and the Internet', UCL Jevons Lecture London, 7 July 2010, available from: <http://europa.eu/rapid/pressReleasesAction.do?reference=SPEECH/10/365>.

[7] See generally Economides, Nicholas, 'Competition Policy in Network Industries: An Introduction' NET Institute Working Paper No. 04-24, NYU, Ctr for Law and Business Research Paper No. 03-10, 2004, pp.1-27. Available from <http://ssrn.com/abstract=386626> or doi:10.2139/ssrn.386626.

[8] See generally Lemley, Mark A. and McGowan, David, 'Legal Implications of Network Economic Effects'. 86 Cal. L. Rev. 479, 1998, pp.1-200 Available from : <http://ssrn.com/abstract=32212> or doi:10.2139/ssrn.32212.

[9] See Wikipedia at http://en.wikipedia.org/wiki/List_of_search_engines (Last visited October 11, 2010)

[10] According to data generated from Hitwise as of June 2011, Google's global market share in online search is 82.80% available from: <http://marketshare.hitslink.com/search-engine-market-share.aspx?qprid=4>. In the EEA, Google enjoys more than 90% market share in online searches. See comScore Report: Europe Digital Year in Review 2010, dated February 2011, Available from: http://www.comscore.com/layout/set/popup/request/Presentations/2011/2010_European_Digital_Year_in_Review_PDF_Request?req=slides&pre=The+2010+Europe+Digital+Year+in+Review.

[11] See Battelle, John, 'The Search: How Google and Its Rivals Rewrote the Rules of Business and Transformed our Culture', Nicholas Brealey Publishing, London, 2008, pp. 39-40; see also Waelde, Charlotte, 'Search Engines and Copyright: Shaping Information Markets, in Law and the Internet', (eds.) Edwards, Lilian and Waelde, Charlotte, 3rd edition, Hart Publishing Limited, Oxford, 2009, p. 229.

[12] For comprehensive information on the history of search engines see generally Battelle, John 'The Search: How Google and Its Rivals Rewrote the Rules of Business and Transformed our Culture', ' see also History of Search Engines: From 1945 to Google Today, available from <http://www.searchenginehistory.com>.

[13] Devine, Kristine Laudadio, 'Preserving Competition in Multi-Sided Innovative Markets: How Do You Solve a Problem Like Google?' North Carolina Journal of Law & Technology, Vol. 10, Issue 1: No. 59, 2008, p. 67.

[14] The history of World Wide Web is available from: http://en.wikipedia.org/wiki/World_Wide_Web.

[15] According to Battelle from 1993 to 1996 the web grew from 130 sites to more than 600,0000. See Battelle, John 'The Search: How Google and Its Rivals Rewrote the Rules of Business and Transformed our Culture', p.40.

[16] See Battelle, John 'The Search: How Google and Its Rivals Rewrote the Rules of Business and Transformed our Culture', p.40.

[17] See Battelle, John, F.11 at p.40.

[18] See <http://www.searchenginehistory.com> (Last visited October 11, 2010)

[19] See Urs Gasser, 'Regulating Search Engines: Taking Stock and Looking Ahead', Yale Journal of Law & Technology, Vol. 9, 2006, p.127.

[20] See Urs Gasser, , F.125 at pp..41-42.

[21] See Urs Gasser, F.19 at p. 42.

[22] Sonnenreich, Wes 'A History of Search Engines', (1997), available from <http://www.searchenginehistory.com/>

[23] Battelle, John 'The Search: How Google and Its Rivals Rewrote the Rules of Business and Transformed our Culture', pp.42-43.

- [24] Battelle, John F. 11 at p.45
- [25] Sonnenreich, Wes 'A History of Search Engines', (1997), Available from: <http://www.searchenginehistory.com>.
- [26] Sonnenreich, Wes 'A History of Search Engines', (1997), Available from: <http://www.searchenginehistory.com>. 27 Hansell, Saul (2003-02-19), "Overture Services to Buy AltaVista for \$140 Million", The New York Times.
- [28] See Yahoo Media Relations Press release at <http://docs.yahoo.com/docs/pr/release1102.html>.
- [29] See Batelle, John, p.53.
- [30] See Batelle, John, F. 11 at p.53.
- [31] See Batelle, John, F. 11 at p.53.
- [32] By August 1994, Lycos had 394,000 documents; by January 1995, the catalogue had indexed 1.5 million documents; and by November 1996, Lycos had categorised over 60 million documents -- more than any other Web search engine. See Micheal Mauldin, Lycos: design Choices in an Internet Search Service, IEEE Expert, Jan-Feb, 1997 at 8, available at <http://www.lazytoad.com/lti/pub/ieee97.html>. Available from: <http://www.searchenginehistory.com>
- [33] By August 1994, Lycos had 394,000 documents; by January 1995, the catalogue had indexed 1.5 million documents; and by November 1996, Lycos had categorised over 60 million documents -- more than any other Web search engine. See Mauldin, Micheal, Lycos: design Choices in an Internet Search Service, IEEE Expert, Jan-Feb, 1997 at 8, available at <http://www.lazytoad.com/lti/pub/ieee97.html>. Available from: <http://www.searchenginehistory.com>.
- [34] See Gasser, Urs 'Regulating Search Engines: Taking Stock and Looking Ahead', Yale Journal of Law & Technology, Vol. 9, 2006, p.128.
- [35] See Gasser, Urs, 'Regulating Search Engines: Taking Stock and Looking Ahead', p.128.
- [36] See History of Search Engines: From 1945 to Google Today, available from: <http://www.searchenginehistory.com>.
- [37] See Batelle, John, 'The Search: How Google and Its Rivals Rewrote the Rules of Business and Transformed our Culture', pp. 57-59 .For further information on the history of yahoo see also Yahoo!'s website available from: <http://docs.yahoo.com/info/misc/history.html>.
- [38] See <http://www.computerhope.com/history/1995.htm>
- [39] See Batelle, John, F. 11 at p. 60.
- [40] See Batelle, John, F. 11 at p.61.
- [41] See Batelle, John, . F. 11 at p. 63.
- [42] For a list of Yahoo's acquisitions see http://en.wikipedia.org/wiki/List_of_acquisitions_by_Yahoo!.
- [43] See <http://www.searchenginehistory.com>.
- [44] See Yahoo's website for a range of services available from: <http://everything.yahoo.com/us/index.php#t0>
- [45] See Zuehlke, Susanne, 'Commission clears Microsoft-Yahoo Search Business Deal', ecommerce law and policy, April 2010, pp. 8-9.
- [46] Hof, Rob, Google Ends Search Advertising Deal with Yahoo, Business Week, November 5, 2008, available from: http://www.businessweek.com/the_thread/techbeat/archives/2008/11/google_ends_search_advertising_deal_with_yahoo.html.
- [47] Devine, 'Preserving Competition in Multi-Sided Innovative Markets: How Do You Solve a Problem Like Google?' pp. 69-76; see also Evans, David S., 'Competition and Regulatory Policy for Multi-Sided Platforms with Applications to the Web Economy' Concurrences, No. 2, 2008, pp. 57-62, 2008, also available from <http://ssrn.com/abstract=1090368>. pp. 1-31.
- [48] The name was changed to Overture in September 2001. See Batelle, p.115.

- [49] See Batelle, John, F. 11 at p.111.
- [50] See Batelle, John, F. 11 at p.109.
- [51] See Batelle, John, F. 11 at p.112.
- [52] See Batelle, John, F. 11 at p.114.
- [53] See Batelle, John, F. 11 at pp.115-117.
- [54] See Batelle, John, F. 11 at p.118.
- [55] See Batelle, John, F. 11 at p. 120.
- [56] PageRank is the core of Google's search engine it takes in to account the number of links to a certain website as well as number of links in to each of linking sites. See Battelle, John p. 75.
- [57] See Page, Lawrence; Brin, Sergey; Motwani, Rajeew; Winograd, Terry. '*The PageRank Citation Ranking: Bringing Order to the Web*' November 11, 1999, available from <http://ilpubs.stanford.edu:8090/422/1/1999-66.pdf>.
- [58] See Vise, David A. and Malseed, Mark, 'The Google Story', Pan Macmillan Ltd, Oxford, 2005, p.85.
- [59] See Brin, Sergey and Page, Lawrence '*The Anatomy of a Large scale Hypertextual Web Search Engine*', at Appendix A: Advertising and Mixed Motives, available from <http://ilpubs.stanford.edu:8090/361/1/1998-8.pdf>.
- [60] See Vise and Malseed, 'The Google Story', p. 84 . (With the exception of two companies Red Hat and Net Scape, nobody was willing to pay for the rights to license the Google search engine).
- [61] See Vise and Malseed, 'The Google Story', pp. 88-89.
- [62] See Google Milestones, available from <http://www.google.com/corporate/history.html>.
- [63] For the history and development of GoTo see Battelle, John, pp. 111-117.
- [64] See Batelle, John, F. 11 at pp. 142-143.
- [65] See European Commission Press Release, Antitrust Commission probes allegations of antitrust violations by Google IP/10/1624 dated 30/11/2010. Available from: <http://europa.eu/rapid/pressReleasesAction.do?reference=IP/10/1624&format=HTML&aged=0&language=EN&guiLanguage=en>.
- [66] See European Commission Press Release, Antitrust Commission probes allegations of antitrust violations by Google IP/10/1624 dated 30/11/2010. Available from: <http://europa.eu/rapid/pressReleasesAction.do?reference=IP/10/1624&format=HTML&aged=0&language=EN&guiLanguage=en>.
- [67] See Google investor Relations: 2010 Financial Tables, available from: <http://investor.google.com/financial/tables.html>.
- [68] See Microsoft's website, Facts about Microsoft, http://www.microsoft.com/presspass/inside_ms.mspix.
- [69] See Microsoft's website, Facts about Microsoft, http://www.microsoft.com/presspass/inside_ms.mspix.
- [70] See the history of search engines ,available from: <http://www.searchenginehistory.com/>
- [70] See the history of search engines ,available from: <http://www.searchenginehistory.com/>
- [71] See the history of search engines ,available from: <http://www.searchenginehistory.com/>
- [72] See Search Engine Land, Microsoft Upgrades Live Search Offerings available from: <http://searchenginewatch.com/3623401>.
- [73] See Greg R. Notess, Microsoft's New Bing-The 'Decision Engine' dated June 8, 2009 available at <http://newsbreaks.infotoday.com/NewsBreaks/Microsofts-New-BingThe-Decision-Engine-54514.asp>.
- [74] For more information on Microsoft's search engine Bing see Danny Sullivan, Meet Bing, Microsoft's New Search Engine, May 28, 2009 available at <http://searchengineland.com/meet-bing-microsofts-new-search-engine-20093>.

- [75] For details about the Microsoft Yahoo deal see Case no comp/m.5727 - Microsoft/ Yahoo Search Business available from: http://ec.europa.eu/competition/mergers/cases/decisions/M5727_20100218_20310_261202_EN.pdf.
- [76] See Case no comp/m.5727 -Microsoft/ Yahoo Search Business available from: http://ec.europa.eu/competition/mergers/cases/decisions/M5727_20100218_20310_261202_EN.pdf; see also Zuehlke, Susanne , Commission clears Microsoft-Yahoo search business deal ecommerce law and policy, April 2010, pp. 8-9.
- [77] See Zuehlke, Susanne , Commission clears Microsoft-Yahoo search business deal ecommerce law and policy, April 2010, pp. 8-9.
- [78] See Monti, Giorgio 'Article 82 and the New Economy Markets' in Competition, Regulation and the New Economy, (eds.) Graham, Cosmo and Smith, Fiona, Hart Publishing, Oxford, 2004 pp.19; see also Posner, Richard A. 'Antitrust in the New Economy', John M. Olin Law & Economics Working Paper, No. 106(2nd series), 2000, p. 2.
- [79] See Posner, Richard A. 'Antitrust in the New Economy', p.2.
- [80] Google: One million servers and counting, Pandia Search News, dated 2 July 2007, available from <http://www.pandia.com/sew/481-gartner.html>.
- [81] See Geradin, Damien, Ahlborn, Christian, Denicolò, Vincenzo and Padilla, A. Jorge, 'DG Comp's Discussion Paper on Article 82: Implications of the Proposed Framework and Antitrust Rules for Dynamically Competitive Industries', 2006, p.13, available from: SSRN: <http://ssrn.com/abstract=894466> p. 13.
- [82] See Geradin, Damien, Ahlborn, Christian, Denicolò, Vincenzo and Padilla, A. Jorge, 'DG Comp's Discussion Paper on Article 82: Implications of the Proposed Framework and Antitrust Rules for Dynamically Competitive Industries', 2006, p.13, available from: SSRN: <http://ssrn.com/abstract=894466> p. 13.
- [83] See OECD Report, 'The Economic and Social Role of Internet Intermediaries', DSTI/ICCP(2009)9/FINAL April 2010, p. 28, available from: <http://www.oecd.org/dataoecd/49/4/44949023.pdf>.
- [84] See OECD Report, 'The Economic and Social Role of Internet Intermediaries', DSTI/ICCP(2009)9/FINAL April 2010, p. 29, available from: <http://www.oecd.org/dataoecd/49/4/44949023.pdf>.
- [85] See Press Release, Mergers: Commission clears Microsoft's proposed acquisition of the Yahoo search business, IIP/10/167 dated 18/02/2010 , available from: <http://europa.eu/rapid/pressReleasesAction.do?reference=IP/10/167&format=HTML&aged=0&language=EN&guiLanguage=en>.
- [86] See David S Evans, 'Competition and Regulatory Policy for Multi- Sided Platforms with Applications to the Web Economy', p.2.
- [87] Rochet, Jean- Charles and Tirole, Jean, 'Platform Competition in Two Sided Markets', 1. J EUR. ECON. ASS' N2003, pp. 990-1029.
- [88] See Evans, David S. and Noel, Michael D., 'The Analysis of Mergers that Involve Multisided Platform Businesses ',Journal of Competition Law and Economics, Vol. 4, Issue 3, 2008,pp. 663-665, available from <http://ssrn.com/abstract=1277776> or doi:nhn017; see also Devine, 'Preserving Competition in Multi-Sided Innovative Markets: How Do You Solve a Problem Like Google?' p. 78.
- [89] See Evans, David S 'Competition and Regulatory Policy for Multi- Sided Platforms with Applications to the Web Economy', p.3.
- [90] See Evans, David S , F47 at p.2.
- [91] See Evans, David S, F. 47 at p.2.
- [92] See Evans, David S, F. 47 at p.2.
- [93] See generally Evans and Schmalensee, 'The Industrial Organisation of Markets with two sided platforms ', 3(1) COMPETITION POL ' Y INTER'L ,Spring 2007; Evans and Schmalensee, 'Catalyst Code : The Strategies Behind the World's Most Dynamic Companies" ,Harvard Business School Law Press, 2007.
- [94] See Evans, David S , F. 47 at p.5.
- [95] See Evans, David S , F. 47 at p.6.

[96] See Evans, David S , F. 47 at p.7.

[97] Rochet, Jean- Charles and Tirole, Jean, '*Platform Competition in Two Sided Markets*', 1. J EUR. ECON. ASS' N2003, pp. 990-1029.

[98] Arguably consumers trade off their privacy for this free search service.

[99] See Evans, David S '*Competition and Regulatory Policy for Multi- Sided Platforms with Applications to the Web Economy*', p.7.

[100] See Evans, David S , F. 47 at p.6.

[101] See Evans, David S , F. 47 at p.10.

[102] See e.g., Lemley, Mark A. and McGowan, David, 'Legal Implications of Network Economic Effects', 86 Cal. L. Rev. 479, 1998, pp. 1. Available from: <http://ssrn.com/abstract=32212> or doi:10.2139/ssrn.32212.

[103] See Katz, Micheal L. and Shapiro, Carl, '*Network Externalities, Competition and Compatibility*', The American Economic Review, Vol 75, No 3, June 1985, p.424; Monti, Giorgio, 'Article 82 and the New Economy Markets' p. 19.

[104] See Katz, Micheal L. and Shapiro, Carl, '*Network Externalities, Competition and Compatibility*', The American Economic Review, Vol 75, No 3, June 1985, p.424; Monti, Giorgio, 'Article 82 and the New Economy Markets' p. 19.

[105] Harbour, Pamela J. and Koslov, Tara, '*Section 2 in a Web 2.0 World*' Antitrust Law Journal 2010 , p. 778.

[106] Harbour, Pamela J. and Koslov, Tara, F. 105 at pp. 776-777.

[107] Harbour, Pamela J. and Koslov, Tara, F. 105 at p.776.

[108] Devine, '*Preserving Competition in Multi-Sided Innovative Markets: How Do You Solve a Problem Like Google?*' p. 80.

[109] See Cecilia Kang, '*Google search guru in Washington to lobby against Internet search engine rules*', The Washington Post, dated January 13, 2011 available from: http://voices.washingtonpost.com/posttech/2011/01/google_search_engine_guru_matt.html

[110] See Evans, David S '*Competition and Regulatory Policy for Multi- Sided Platforms with Applications to the Web Economy*', p.10.

[111] See Geradin, Damien, Ahlborn, Christian, Denicolò, Vincenzo and Padilla, A. Jorge, '*DG Comp's Discussion Paper on Article 82: Implications of the Proposed Framework and Antitrust Rules for Dynamically Competitive Industries*' , p.21.

[112] See Pons, Jean Francois '*European Competition Policy in the New Economy*', International Competition Policy Conference 2001 Regulatory Policy Institute, Oxford, 2001 , p.10 available from: http://ec.europa.eu/competition/speeches/text/sp2001_012_en.pdf.

[113] Universal Search was introduced by Google in 2007. When one uses Google, Universal Search, returns more than the just the traditional text results. As an example when one searches for Micheal Jackson it brings back images, news, local listings, shopping, video, blog posts, etc. See Google's own blog on Universal Search <http://googleblog.blogspot.com/2007/05/universal-search-best-answer-is-still.html>. Google calls this service as blending, whilst others call it as bundling as Universal Search places Google's own services such as YouTube results and Google News at prominent positions.

[114] See European Commission Press Release, Antitrust Commission probes allegations of antitrust violations by Google IP/10/1624 dated 30/11/2010 available from: <http://europa.eu/rapid/pressReleasesAction.do?reference=IP/10/1624&format=HTML&aged=0&language=EN&guiLanguage=en>.

[115] Spiegel Online Edition, 'Verleger schalten Kartellamt gegen Google ein', dated January 16, 2010, available from: <http://www.spiegel.de/netzwelt/netzpolitik/0,1518,672343,00.html> (only German version is available).

- [116] Microsoft's allegations in relation to Commission's investigation are available from: http://blogs.technet.com/b/microsoft_on_the_issues/archive/2011/03/30/adding-our-voice-to-concerns-about-search-in-europe.aspx.
- [117] See Chee, Fo Yun, 'Exclusive: Nine Google complainants in the EU probe' Reuters, dated August 2, 2011 available from: <http://www.reuters.com/article/2011/08/02/us-eu-google-idUSTRE77131I20110802>.
- [118] See Google's public policy blog confirming the FTC's investigation, available from <http://googleblog.blogspot.com/2011/06/supporting-choice-ensuring-economic.html>.
- [119] See Cade, Metz, 'Google faces antitrust investigation in Texas EU complaint echoed in US' dated September 3, 2010 available from http://www.theregister.co.uk/2010/09/03/google_antitrust_investigation_in_texas/
- [120] The claimant MyTriggers.com, an Ohio-based shopping comparison search Website, accused Google of giving preferential treatment in its search results to Google's own service and thereby putting competitors at a disadvantage.
- [121] See Case no comp/m.5727 -Microsoft/ Yahoo Search Business available from: http://ec.europa.eu/competition/mergers/cases/decisions/M5727_20100218_20310_261202_EN.pdf.
- [122] See Wood, David, 'EU Competition Law and the Internet: Present and Past Cases' Competition Law International, April 2011, p. 44.
- [123] See Introna & Nisenbaum, 'Shaping the Web: Why the politics of search engines matters' *The Information Society*, 16 , 2000 , p. 141; see generally Goldman, Eric, 'Search Engine Bias and the Demise of Search Engine Utopianism' Yale Journal of Law & Technology 2005-2006 , Santa Clara Univ. Legal Studies Research Paper No. 06-08; Marquette University Law School Legal Research Paper No. 06-20, p.122. Available from SSRN: <http://ssrn.com/abstract=893892>.
- [124] See Grimmelman, James 'The Google Dilemma' 53 New York Law School Law Review, 2009 p. 944.
- [125] See Marsden, Philip, 'Online search: Antitrust', Competition Law Insight, July 2011 p. 18.
- [126] See Marsden, Philip, F.125 at p. 18.
- [127] Commission Decision of 24 May 2004 relating to a proceeding pursuant to Article 82 of the EC Treaty and Article 54 of the EEA Agreement against Microsoft Corporation (Case COMP/C-3/37.792 - Microsoft), summary available from : <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2007:032:0023:0028:en:PDF>.
- [128] Commission Decision of 24 May 2004 relating to a proceeding pursuant to Article 82 of the EC Treaty and Article 54 of the EEA Agreement against Microsoft Corporation (Case COMP/C-3/37.792 - Microsoft), para. 18-23 .
- [129] For a discussion of cases in both the transport and financial services sector which might provide some guidance in relation to Google investigation see Wood, David, 'EU Competition Law and the Internet: Present and Past Cases' Competition Law International, April 2011, pp. 44-49.
- [130] See Marsden, Philip, F.125 at p. 18.
- [131] See Marsden, Philip, , F.125 at , p. 18.
- [132] See Marsden, Philip, , F.125 at p. 18.
- [133] Joaquín Almunia, Vice President of the European Commission responsible for Competition Policy, New challenges in mergers and antitrust IBA annual competition conference Florence, 16 September, 2011 available from: <http://europa.eu/rapid/pressReleasesAction.do?reference=SPEECH/11/581&format=HTML&aged=0&language=EN&guiLanguage=en>.
- [134] For various criticism see amongst others Kallaugher and Sher, 'Rebates Revisited : Anti- Competitive Effects and Exclusionary Abuse under Article 82', 25 European Competition Law Review, 2004, pp. 263-285; P Jebesen and R Stevens, 'Assumptions, Goals and Dominant Undertakings: The Regulation of Competition under Article 86 of the European Union' 64 Antitrust LJ, 1996 pp.443-51; B Sher, 'The Last of Steam Powered Trains: Modernising Article 82' 25 European Competition Law Review, 2004 p.243 ;See Fox, Eleanor M, 'Monopolization and Dominance in the United States and the European Community: Efficiency, Opportunity, and Fairness', 61 Notre Dame L Rev, 1986, p. 1004.

[135] DG Competition Discussion Paper on the Application of Art 82 of the Treaty to Exclusionary Abuses(December 2005) available at <http://ec.europa.eu/competition/antitrust/art82/discpaper2005.pdf>.

[136] DG Competition, Communication from Commission, Guidance on the Commission's Enforcement Priorities in Applying Article 82 Treaty to Abusive Exclusionary Conduct by Dominant Undertakings Brussels 3 December 2008.

[137] See Kavanagh, James, Marshall, Neill and Niels, Gunnar '*Reform of Article 82- Can the Law and the Economics be Reconciled?*' in Article 82 EC: Reflections on its Recent Evolution, (ed.) Ariel Ezrachi, Hart Publishing, Oxford, 2009, pp. 1-19; see also Bellis, Jean- Francois and Kasten, Tim, '*Will Efficiencies Play an Increasing Important Role in the Assessment of Conduct under Article 102 TFEU*' in Competition Law and The Enforcement of Article 102(eds.) Federico Etro, Ioannis Kokkoris, Oxford University Press, 2011, pp. 135-137.

[138] Damien Geradin, 'Is the Guidance Paper on the Commission's Enforcement Priorities in Enforcing Article 102 TFEU Useful?' in Competition Law and The Enforcement of Article 102(eds.) Federico Etro, Ioannis Kokkoris, Oxford University Press, 2011, pp. 51-52.

[139] Damien Geradin, F.138 at pp. 51-52.

[140] Under Article 101(3) if certain conditions are met an automatic exemption from the effect of Article 101(1) is granted, which allows efficiencies and an economics based approach.

[141] Damien Geradin, F.138 at pp. 51-52.

[142] Damien Geradin, F.138 at pp. 51-52.

[143] See Posner, Richard A. '*Antitrust in the New Economy*', p.9.