



# **The Perils of Dominance: Exploring the Economics of Search in the Information Society**

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## Executive Summary

Google has become a dominant force in the Internet – its products and services are widely used throughout most countries in the world; its products and services dominate the listings of the most popular websites across the world; and it has successfully migrated its products into other related sectors, such as mobile and office applications. The term ‘google’ has entered common parlance. It remains a company with an extra-ordinary clear vision of the future and its continuing dominant role in this new world. Google is a company with the resources to continue to feed its appetite for acquisitions and a revenue stream from advertising that enables it to price many of its products, at the point of consumer use, at zero.

Google is also a company that has largely escaped regulatory attention although its activities are beginning to attract awareness in both the European Union and the USA. Much of this attention however, has focused on issues of privacy and the violation of data protection laws at the expense of a rigorous analysis under competition law precepts. Although recent moves by competition authorities in Europe, including the European Commission, and the USA have begun to question the presumption that the Internet, and Google, is subject to un-restricted forces of competition, much remains to be done.

This paper, funded by ICOMP, argues that the dominant position held by Google warrants much greater public scrutiny and that the competition authorities are well placed to lead this scrutiny. The benefits of an open and competitive Internet are clear for all, but this historical precedent and assumption of competition is an increasingly weak and unsafe presumption with which to view the continuing evolution of the Internet. Further, to narrow the public policy scrutiny of the Internet, and Google in particular, to issues of privacy is a derogation of oversight.

The challenges to maintaining a free and competitive Internet, and an Internet that creates sustainable and widespread economic and social gains for everyone, are challenges of the future rather than issues solved in the past. Understanding the market dominance of Google and its implications in the current stage of the development of the Internet is thus a key priority for competition authorities, especially within Europe.

# 1. Introduction

The prevailing narrative describing economic and social activity around the Internet is conducted in terms of innovation, transformations and the realisation of a new economy. This narrative underlines a historic perception of the Internet as a radical and positive innovation which offers new forms of economic and personal freedom. As part of this narrative the public policy debates around the Internet have been shaped and honed down into a narrow set of issues – of which two of the most significant are privacy and cyber-security. The consequence of this narrative and restricted framing of the public policy debates is that fundamental issues about the economics of the Internet and the effectiveness of competition within the Internet are muted or misunderstood. This paper sets out to begin to redress issues and initiate a debate about the Internet in terms of competition policy and dominant players in the market.

The purpose of this paper is to explore the nature of competition on the Internet with a specific focus on search. The paper draws on several bodies of literature and the analysis of USA and EU competition authorities in their review of several merger cases (for example the acquisition of DoubleClick by Google and their concerns over Google Books and the MS/Yahoo proposed merger). The core conceptual foundations of this paper derive from a two sided market perspective, especially a centralised two sided market, and the extension of this concept to include multi-sided platforms. The argument is that search is best understood as a centralised two sided market and hence the economies of scale derived from the “centralisation of matching offers efficiencies” (Spulber 2010) led to a dominant position being held by one firm.

Specifically, this paper addresses how the undisputed market dominance held by Google in search underpins its activities in online advertising – the earliest and primary manner in which Google is able to monetise its search based activities.<sup>1</sup> The analysis focuses on the ways in which Google is using its resources to offer new services and bundles (typically for free at the point of use by consumers) in related markets. The approach of offering consumers with new services bundles with search may foreclose competition in those related markets. This process of market extension by Google underscores the centrality of search in an ever expanding, but centralised, two sided market. The outcome strengthens both the market position held by Google and uniquely its ability to monetise search results through online advertising.

The concept of a multi-sided platform is used in this paper to explore the ways in which Google is using its resources (both financial and technical) to extend its scope of activities into new markets (e.g. mobile, content, and cloud computing) based on a paradigm that makes search the central feature and organising principle of service delivery. Thus Google introduces a centralised two sided process into markets related and adjacent to Internet search. In so doing, Google is creating new value propositions for users and online advertisers, which inevitably strengthening the market power of Google.

This conceptual framework allows insights into the business strategy. The dominant firm will provide an increasing array of “free” services to consumers in as wide range of related markets as possible. Revenue streams will flow from online advertising. The result is that a disparate array of services becomes a coherent whole when viewed in terms of the centrality of search. Further, the dominant firm in search will provide increasingly sophisticated services to advertisers through

<sup>1</sup>It is worth noting that originally Google licensed its search algorithm to others, e.g. Overture, who were provided the primary monetisation. This business model, from the perspective appeared unattractive and Google then couple search with advertising and refused to licence the search engine algorithm separately. See for example the discussion in Vise (2005), page 86 – 89.

which it monetises the value of search. These services will ultimately deliver higher value to the advertiser in relation to actual consumer buying behaviour rather than proxy measures of interest, such as click-through rates. Such development could allow the dominant firm in search to transition from an online advertising model to one based on a revenue sharing model – a potentially radical innovation in the business model of Google.<sup>2</sup>

For the consumer, the delivery of services will increasingly seek to use information about the consumer, revealed by multiple sources of information such as a history of search terms, time and place of the consumer enquiry. In effect new services are becoming increasingly personalised and the gap between the information gathered via the device and the actual behaviour of individual consumers reduced – hence the importance of research into personalised search engines and the aggressive move into mobile internet, as evidenced by Google's recent acquisition of AdMob for \$750 million and the reported revenue from mobile search of at least \$1bn.<sup>3</sup>

Increasingly rich information sets based around the individual underpin a trend towards perfect matching in a centralised two sided market – creating a significant barrier to entry. The centripetal effects of search delivery are complemented through the centrifugal forces of a multisided platform. These outcomes that theory predicts are reflected in the strategic behaviours of Google, namely the continuing dominance of Google in core product and geographic markets for search as well as extending their market position in related markets.

In this review, we will examine two of the central controversial issues with which Google is embroiled, most of them associated with its growing market power. These are, first, the consequences of its dominant share of the on-line search advertising market-place, originating from its dominant position in search, and the opportunities it enjoys to leverage that power into other areas. Second, the implications of its increasing involvement in content, especially as a book distributor come publisher, and as an aggregator of other media content, especially news.

<sup>2</sup>Of course if Google owns the firm in the downstream market, the contracting problems are automatically solved.

<sup>3</sup>See for example, "*Bringing back the growth and entrepreneurial magic*", Deutsche Bank research note 21/January/2011

## 2. Search – Inside the Black Box

Search has become integrated into our daily lives, it has become the interface between ourselves and the professional and social use of the Internet. But what actually goes on inside a search engine? Eric Schmidt recently called search a “black box” – an artifact which we commonly understand as something which allows us to see what goes in and what goes out but nothing else!

It is commonly understood that at the heart of a search engine is an algorithm which relies on a variety of inputs and decision rules to produce outputs. The input is the word or phrase keyed in by the user. The output is what the user sees on the screen, which is usually made up of three types of results:

- a ranked list of ‘natural’ results in the form of hyperlinks and a short text,
- a list of adverts (also called ‘sponsored links’), and
- results which comprise links to other products and services provided by the search engine or its partners (such as maps, video, etc)

The first thing to understand about what is going on inside a search engine is that these three different kinds of results are not generated by the same algorithm. On the contrary, each of the different kinds of results is generated by a distinct algorithm designed for very different purposes. In order for them to be categorised more clearly, they can be described as a ‘search algorithm’, a ‘search advertising algorithm’ and a ‘product placement algorithm’.

A ‘*search algorithm*’ is not neutral but is intended to produce natural search results which are the best answer to what the user is looking for. And like all algorithms the best natural results are defined by a set of decision rules which, in the final analysis are exogenous to the algorithm. As noted by Marissa Meyer:<sup>4</sup>

*“Search engines use algorithms and equations to produce order and organisation online where manual effort cannot. These algorithms embody rules that decide which information is “best”, and how to measure it. Clearly defining which of any product or service is best is subjective.”*

The object, therefore, is to find the best result. This is not the same as the most obvious result, since any search engine can find the obvious results. If you type BBC into a search engine, the first result you expect to see is a link to the BBC homepage. However, the really clever aspect of search engines is that they can find results that are much less frequently searched for – the obscure and rarely searched for result. This is often known as the ‘long tail’. The long tail is not easy to capture. It requires not only lots of users asking lots of questions,<sup>5</sup> it requires constant updates to the search algorithm.

Hence the nature of a search engine is dynamic, and in the case of Google, it’s search has been described thus:<sup>6</sup>

*“Google ranking is a collection of algorithms used to seek out relevant and useful results for a user’s query. ... Our algorithms use hundreds of different signals to pick the top results for any given query.”*

<sup>4</sup>Do not neutralise the web’s endless search, Marissa Meyer, Financial Times, July 14 2010

<sup>5</sup>One measure of the search is the number of new searches each day that a search engine has never experienced before; “a quarter of all daily searches on Google have never been seen before” Meyer, ibid and Eric Schmidt, November 2010, put the number closer to 15% - but each was stressing the importance and volume of new search terms.

<sup>6</sup>This stuff is tough, Amit Singhal, Google Fellow, 25 February 2010, Google European Public Policy Blog

*Signals are indicators of relevance, and they include items as simple as the words on a webpage or more complex calculations such as the authoritativeness of other sites linking to any given page. Those signals and our algorithms are in constant flux, and are constantly being improved. On average, we make one or two changes to them every day."*

These mechanical indications combined with historical data, as well as trial and error, are the prime drivers of how search engines seek to find the 'right' result. However, it is critical to understand that humans also play a significant role – in the end the decision rules are defined by management decisions. Examples of rules generated by humans include valuing the relevancy of a result to a given query by reference to the length of the website, or the number exclamation marks, or the number of other websites which hyperlink to it or the webpage loading speed. It has even been suggested that the relative success of adverts on a given site (measured by the CTR, or click-through rate) can influence search results.

These human-designed features of search algorithms can be used in a variety of ways to influence search outcomes. For example, they can be used to identify certain values that are characteristic of types of site or online business, such as vertical search or online maps. Those types of site can then be promoted or demoted as a group or even individually. Moreover, given the importance of search advertising revenues to online search, it is interesting, to say the least, that natural search results might be, and in principle can be, skewed towards sites which are most profitable from an advertising point of view. In any event, it is important to note that this is a process in which there is a considerable human element that goes into determining the output from a given search input.

Secondly there is the '*search advertising algorithm*'. This algorithm helps set the prices that advertisers pay for the 'sponsored links' that appear at the side and above the 'natural' search results. Under the terms of the auction process for AdWords, buyers of search advertising enter a sealed bid (other buyers do not see it) for the maximum amount they are willing to pay for the keyword they wish to bid on. The amount the winning bidder actually pays is the higher of one cent more than the next bidder, or one cent more than the minimum cost-per-click (CPC) set by Google. The search advertising algorithm determines at what level Google sets the minimum cost-per-click.

The minimum CPC or reserve price is set individually for each bidder and is made up of the following factors (Source: Google):

- The historical clickthrough rate (CTR) of the keyword and the matched ad on Google
- Your account history, which is measured by the CTR of all the ads and keywords in your account
- The historical CTR of the display URLs in the ad group
- The quality of your landing page
- The relevance of the keyword to the ads in its ad group
- Your account's performance in the geographical region where the ad will be shown
- Other relevance factors

In other words, Google's reserve price for each individual AdWords bidder is set on the basis of its search advertising algorithm.

Finally there is what we refer to as the '*product placement algorithm*'. This algorithm is taking on more significance as search engines, and Google in particular, create a 'stack' or bundle of related

products and services based on search. The mechanisms by which this product placement algorithm works are captured in the following quote;<sup>7</sup>

*“People often ask how we rank our “own” content, like maps, news or images. In the case of images or news, it’s not actually Google’s content, but rather snippets and links to content offered by publishers. We’re merely grouping particular types of content together to make things easier for users.*

*In other cases, we might show you a Google Map when you search for an address. But our users expect that, and we make a point of including competing map services in our search results (go ahead, search for “maps” in Google). And sometimes users just want quick answers. If you type “100 US dollars in British pounds,” for example, you probably want to know that it’s “£63.9p” – not just see links to currency conversion websites.”*

This seems to mean that Google does not apply its usual search algorithm to its own products and services. Instead, it seems to apply a distinct and separate ‘product placement algorithm’ so that the most relevant of its own products and services (and sometimes it seems those of its partners) are placed in the leading results. Thus, for example, not only maps and videos (YouTube) get advantageous placement but also other services such as Google’s shopping engine. Foundem has published a detailed empirical analysis of what this means in practice.<sup>8</sup>

However, notwithstanding Google’s coyness about the existence of a distinct and separate ‘product placement algorithm’, there seems to be little doubt that one exists.<sup>9</sup>

*“We also asked Schmidt if Universal Search – which gives prominent placement to links from other Google services, including Google Maps, Google Product Search, and Google News – uses separate algorithms from the company’s primary search results, but he did not address this portion of the question”.*

The user experience is the outcome of the interplay between these ‘algorithms’. In order to maximise the value proposition there is clearly great potential for a search engine to run its ‘search algorithm’ and ‘product placement algorithm’ together. The former can be used to weed out content that Google prefers to see in a lower ranking, whilst the latter is used to place Google’s own product and services high up the list.

As with the link between the ‘search algorithm’ and ‘product placement algorithm’, there is also a link between the ‘search algorithm’ and ‘search advertising algorithm’. The lower the ranking a site obtains under the search algorithm, the more likely it is to have need to the recourse of search advertising to get the attention of users. Moreover, the lower the ranking it obtains, the higher it will have to bid to obtain the keywords it needs to get to the attention of viewers.

It is vital for web users and online businesses to know how search results are determined – what does go on inside the black box? Whilst there is general consensus that search results should filter out spam and other unwanted material, web users and businesses need to be aware whether the search results they are presented are deliberately skewed to favour certain commercial services, e.g. those provided by the search engine itself.

<sup>7</sup>Amit Singhal, WSJ, 17 September 2010

<sup>8</sup>A version of this data was presented at ICOMP annual meeting March 2010

<sup>9</sup>Schmidt answers Google antitrust claims, Defends Universal Search, Cade Metz, The Register, 28 September 2010

### 3. Google

During its first decade Google<sup>10</sup> was an extra-ordinary success story driven by innovation, imagination, fortuitous timing and good luck! Google was started, famously, in a garage by two Stanford PhD students, Sergei Brin and Larry Page.<sup>11</sup> Its initial intellectual property was an algorithm which calculated the quality of any web page, and thus permitted the ranking (known as PageRank) of any page. Performed at very high speed, the procedure generated an instantaneous ordered list of where to look for material on the burgeoning web. With the growth of the web in recent years, such prescient anticipation of the need for scale has proved invaluable.

News of the availability of the search engine took off. By the start of 2000, 7 million daily searches were being undertaken, compared with half a million a year previously. The computing power required grew correspondingly, as did the costs. The key need was to devise a corresponding revenue stream. ISPs could bundle search into a paid-for subscription. For Google and other free-standing search engines, the solution lay in generating advertising revenue.

After trial and error, Google hit upon the long term solution. The search results page is divided into two areas, one (normally on the left) containing the “natural” search results, ordered by the adopted algorithm, the other (normally across the top and on the right) containing a list of paid advertisements.<sup>12</sup> Advertisers bid on search query terms, known as keywords. The price in question is that paid when a user clicks on the advertisement – the cost per click. The price is based on what was bid by the bidder ranked below, making it a so-called second price auction.<sup>13</sup> However, as the search engine’s revenue is the price per click times the number of clicks, this encourages it to put popular advertisers up at the top. It also wants the advertisements to be attractive to searchers. These two additional ‘quality scores’, together with the bid price per click determine the ultimate rankings.

There is, however, concern that the factors used by Google to condition the results by adding quality scores have a potential to undermine the economic elegance of the second price auction. Thus whilst the quality score may be useful in inhibiting gaming by firms in terms of search results and their placing, there may be distortionary impacts on the prices paid in the auctions. Further there is a concern that Google, at its simplest, is able to manipulate the results in its strategic interest. The working of the Google search engine has spawned a new service activity, search engine optimisation, and invoked considerable critical attention. Whilst the perceived integrity and usefulness to consumers of the search results is critical to the use of Google search tools there is growing concern that the results can be manipulated, for example the recent work by Ben Edelman.<sup>14</sup>

The market capitalisation of Google has risen from zero to around 200bn in the course of a decade.<sup>15</sup> According to Goldman Sachs (2011),<sup>16</sup> Google’s total revenue exceeded \$22bn at

<sup>10</sup>Google is a common misspelling for Googol, or 10 to the power of 100.

<sup>11</sup>Auletta (2009) is a readable and perceptive source for the early, and later, years of Google.

<sup>12</sup>See Evans 2008 for

<sup>13</sup>At first sight it looks as if the seller is foregoing revenue by charging not what the bidder offered but what the next lowest bidder did. However, a rational person knowing the rules would adjust her or his bid upwards. Several economists have investigated the theoretical properties of an auction like this, often finding them to be in doubt. But it seems to work in practice.

<sup>14</sup>For several recent articles examining the bias in search results see <http://www.benedelman.org/>

<sup>15</sup>Market capitalisation numbers from analysts report vary overtime, recent numbers for Google suggest a current valuation at around 190bn USD, see for example, Williams Capital Research notes on Google, 21/1/2011, ([research@willcap.com](mailto:research@willcap.com)). In their research note of 15th February 2011 Goldman Sachs reported a market capitalisation value for Google of 203.18bn USD

<sup>16</sup>Goldman Sachs – *Key takeaways from Google at the 2011 GS Internet Conference*, 15th February 2011

the end of 2010 and forecast it to grow as follows – \$27.196bn (12/11); \$31.802bn (12/12) and \$36.179bn (12/13). But more tellingly it has captured the imagination of billions of consumers and entered the language. It has also sought to be brilliant in a different way than Enron or Goldman Sachs, as is captured by its original ‘don’t be evil’ motto.

The basic business model of Google can be understood in terms of its ability to monetise search terms through the provision of online advertising services. The sheer volume<sup>17</sup> and resulting scale effects flowing from the dominance of Google in search delivers significant advantages over its competitors or those wanting to enter the search or search advertising market. Most notably these scale effects allow Google to be able to secure higher revenues for equivalent search terms compared to other search engines, calibrate its auction process and monetise new search terms considerably more rapidly than its competitors and to extract greater profits from the ‘long tail’. In delivering “free” services in the ICT and telecommunications markets (such as search, gmail, Google docs) Google reinforces its market position in search. By being able to deliver higher RoI on advertising spend (compared to traditional media), Google can gain market share in advertising markets, and as shown below, secure a dominant position in online advertising markets.

Google is learning, however, like others in the past, particularly in the tech sector, that the euphoria and public acceptance surrounding an imaginatively disruptive start-up can fade as it puts away childish things and grows into the more adult responsibilities associated with market leadership and the use of market power.<sup>18</sup>

<sup>17</sup>One measure of the scale of information processed by Google is that it processes approximately 1Petabyte of information every hour – all the books in the Library of Congress is the equivalent of 1.5% of a petabyte

<sup>18</sup>Thus under well-established European competition law rules, undertakings which are dominant in any market have a ‘special responsibility’ to protect the, already damaged, competitive process in that market.

## 4. Business Models on the Internet

The nature of competition between firms providing search services varies and provides an important context within which to review the behaviour of Google. In terms of competition behaviours there is not one Internet and the different understanding of the way in which competition can be understood are critical. One approach to understand these differences is to differentiate between vertical and horizontal forms of competition. The former focuses on the differentiation in the quality of service offered and the latter in terms of the bundle of services offered. As commented by Spulber, horizontal competition should lead to multiple players whereas vertical competition may lead to a dominant player. These differences manifest themselves in the different business models that can be observed and exploited in the Internet, most notably the different strategies of Yahoo! and Google.

This paper characterises the different approaches by proposing and comparing two different perspectives, namely population centric models (i.e. a horizontal model) and event driven models (i.e. a vertical model).

### Horizontal – Population Centric Models

The key value proposition of these business models derives from (i) the ability of the platform to provide access to a *known* population of users, and (ii) the ability to connect users who have mutual interests. The value of the platform is based on the totality of the services that it provides and on the size and nature of the total population, its dynamic characteristics and the nature of shared and collective behaviours. The underlying assumption is that within the population of users an individual has a known and stable identity and that this identity reflects economic and social realities – hence in the final analysis the individual is the unit of consumer analysis. Thus one of the key assumptions here is that the real life behaviours and values of the individuals largely drive their on-line behaviour. For the user the linkage to the platform is typically through a series of multi-lateral engagements where, to a large extent, the value derived from the platform is a function of who else is on-line (e.g. instant messaging). In many cases the engagement with the platform is an end in itself for the user (for example a portal). For the consumer, the nature of the multilateral engagement means that the network externalities (created by the platform) are distributed in real time, for example, the value of instant messaging lies in the real-time connection and network of individuals who are on-line.

The characteristics of a 'population' centric business model are:

- Feature rich platforms responding to consumer demand for functionality and low consumer prices, if any
- The willingness of a consumer to pay will be influenced by the range of services and the nature of content
- Competition amongst the platforms will be focused over the range of features and brand
- Quality of service is inextricably linked with the functionality of the platform and network access online advertising revenues will have a bias towards banner ads addressing the demographic characteristics of the user population
- Relatively easy and low cost appropriation of innovations and hence a strong 'me-too' behaviour amongst competitors and ensuring low entry costs

- Market differentiation and the ability to secure consumer revenues is critically dependent on ownership and distribution of high value and exclusive content, for example sporting rights
- Switching costs for users tend to be low, except where exclusive content rights are used to extract long-term contracts from consumers.

## Vertical – Event Driven Models

Event driven business models seek to link users and advertisers around discrete events and hence the key value proposition rests in this ability to link advertisers to consumers around specific events in real-time. The best example here is search and a specific search enquiry is an event. Typically, the user engages with the platform on a unilateral basis (and often very frequently) and the distribution of the externalities are controlled by the platform owner. The user's connection to the platform is as a means to an end rather than an end in itself; moreover the results of the engagement can translate the event into other behaviours – thus in contrast to population centric models, events are not necessarily located in current behaviours but may lead to changes in behaviour. So, for example, a speculative search enquiry about flight availability may in itself translate into a journey.<sup>19</sup> Importantly the value of the platform is located in the events and accumulated knowledge about the events and the individual rather than in the knowledge of the crowd.

Characteristics of an 'event driven' business model are:

- Services are free at the point of consumption for users
- For consumers there are considerable path dependencies (accumulation benefits) which reinforce market position and create significant switching costs
- On the supply side the path dependencies create sustainable barriers to entry. The existence of substantial economies of scale and scope couple with significant informational resources (such as the knowledge of searches and meta level descriptions of the web) reinforce these barriers to entry and reduce the risk of the appropriation of innovations
- The revenue model is exclusively driven by online advertising fees and these adverts are exclusively linked to specific events.
- The online advertising is targeted at specific events and pricing of advertising is based on response rates, such as CTR, allowing an accurate calculation of rates of return for advertisers. The ability to relate advertising activity and rates of return allows for the more accurate pricing of advertising resources
- Products and services are complimentary to alternative business models (support access and monetarisation of the 'long tail') and so can be embedded in these alternatives
- Quality of service is primarily focused on the search results and less on the functionality of the network
- Significant brand qualities can be attributed to the platform and key elements of brand include, *inter alia*, independence, neutrality, trust and integrity

Whilst these two business models are described as opposites, both can exist within the same organisation (for example as is the case with Yahoo!, Google and Bing).

<sup>19</sup>Hence a concern about the proposed acquisition of ITA by Google

## 5. Market Power in Search and Related Areas

Internet search is a classic two-sided market in which the search engine is an intermediary between those searching for information and those placing advertisements. The price which searchers pay is exposure to advertisements – which may be a cost or a benefit.<sup>20</sup> The possibility that they are an imposition discourages too many, or too intrusive, advertisements. Clearly, the most popular search engine is likely to earn the largest revenues and deprive its rivals of funds with which to compete. The European Commission has cited data showing that Google has a market share of search in Europe of around 95%<sup>21</sup> and officials have stated that the market share figures give a good indication of market power.

The economist Daniel Spulber has undertaken an analysis of what he calls the ‘circular flow of information managed by a search firm’.<sup>22</sup> What distinguishes the search engine from many other firms at the centre of two-sided markets is the amount of information the search engine has about its customers and advertisers – the volume and detail of this information may be the key to interpreting Larry Page’s observation about search being the be-all and end-all.

Searchers reveal the product categories in which they are interested by their search terms, by the content (including with Google Books, their choice of literature) which they view, by clicking on advertisements and by their on-line purchasing arrangements. Search engines convey information to advertisers on search terms and keywords and how much value is attached to these words and terms through the auctions.<sup>23</sup> The advertisers can observe the success of their own advertising, in terms of generating click-throughs and purchases, and accordingly make adjustments to the bids they place for key words. They also disclose to the search firm what the keywords and search terms the advertisers are interested in and, by their bids, the value of these keywords and search terms. New data is constantly being generated and processed, and the search firm is the spider in the middle of the web. The search engine is able to set the terms of trade based on access to all the information in a “game” where it holds all the cards.

### Cost Structures and Features of Demand in Search Markets

The economics of advertiser-supported search revolve around fixed costs, economies of scale and features of the demand side. The fixed cost element is common to almost all activities and need not detain us long. A search firm of any size will have to implement certain procedures, such as upgrading its software, and these will vary less than proportionately to scale. The volume of computer power and their co-ordination required to undertake large scale search beggars belief. It is likely that concentrating these activities in a few large sites scattered around the globe, consuming as much electricity as a small town, is the least cost procedure. Unless these factors by themselves drive the activity towards very high levels of concentration, such as characterise physical distribution networks, these issues are unlikely to be of much policy interest. The potential network effects of these physical resources are increasingly playing an important role in the business plans of Google. The much heralded call of ‘mobile first’<sup>24</sup> and the development of

<sup>20</sup>It is probably reasonable to assume that the ad cost also features in the price of the goods for those who do purchase.

<sup>21</sup>Joaquín Almunia Vice President of the European Commission responsible for competition policy Competition in Digital Media and the Internet UCL Jevons Lecture London, 7 July 2010, SPEECH/10/365.

<sup>22</sup>Daniel Spulber, *The map of commerce: internet search, competition, and the circular flow of information*, Journal of Competition Law and Economics, 5 (4), 633-682.

<sup>23</sup>During his participation to the Council of Foreign Relations debate on disruptive technologies, Eric Schmidt said that each day 15% of the queries Google see each day are new, search terms that Google has not seen before. New York November 3rd 2010. (video source: <http://www.youtube.com/watch?v=eJAMD5p5tQo>).

<sup>24</sup>See for example Eric Schmidt’s speech at Mobile World Congress in February 2010 or his talk at DLD in Munich in January 2011.

services on the 'cloud' are recent illustrations of the way in which Google are building scale and network effects around new services and products.

In this case, platform economies of scale are augmented by advertiser economies of scale, leading the latter to prefer large campaigns which are cheaper to set up and monitor than a series of smaller ones. It may also be that platform economies of scale are reinforced through contracts that limit the use of other, competing platforms; for example, Google often adopts contractual restrictions on advertisers to prevent efficient running of a campaign on multiple platforms.

The demand side is more interesting. As Evans notes, platforms such as Google's offering search advertisements generate indirect network effects. These are not the same as those which accrue to mobile networks which offer cheaper rates for on-network calls, since price-based signals are not relevant on the consumer side in advertiser supported regimes. Instead, they come into being because the thicker the market (the greater the amount of activity on the platform), the greater the number of feasible trades and the greater the chance that consumers' heterogeneous tastes can be satisfied. As Evans notes (p 374), there is a positive feedback loop in operation involving both sides of the market. The power of the data grows with accumulation – both within a given market horizontally and, as we shall see, as other related advertising markets are penetrated.

Can a small search firm leapfrog over another larger one? It could in principle if it were more efficient. Or it could provide search advertisement services to other search sites. But, as Evans shows, a larger search firm is likely to be better placed to do this, and hence to outbid a smaller one for third party traffic. Also, in the case of Google it is has, through its wide product portfolio across fixed and mobile Internet services, created a multitude of default options that effectively lock consumers into Google; for example, Android and Chrome default consumers to Google services.

Evans' conclusion (2008) is that while there are factors at work (most notably the feedback loop) which might lead one to suppose that this is a case of 'winner-take-all' competition, there remain others which go in the opposite direction. This suggests the need for a case by case analysis of any competition problems in the relevant markets. But what are those markets?

## **Market Shares and Dominance**

Advertising is a large (US \$625+bn, per annum) global market place. However, any competition analysis requires a proper analysis of how distinctive particular components are, and what opportunity there is for a firm which corners the supply of a particular kind of advertising in a particular country to raise the price of advertising

When a new service becomes available, competition authorities usually abstain from formally identifying it as a separate market, not least because, by doing so, they would implicitly be characterising the service's supplier as a monopolist, and thereby chilling incentives to innovate. The competition authorities would also be prejudging a temporal dynamic to market development and innovation effects. In the case of search advertisements, however, the service is getting mature and significant in revenue terms, so the need and the moment to define markets explicitly is upon us.

The formal question to be asked is the following: if a firm had a monopoly of search advertising, would it be able and have an incentive to increase profits by restricting supply and raising price? Because search advertising is not a pure monopoly (despite Google's market share and

undoubted market power) the answer is hypothetical and can legitimately vary from jurisdiction to jurisdiction. In the recent past, competition authorities have answered it as follows.

In the 2007 case of Google and DoubleClick, which revolved about a different issue, as we shall see, the FTC statement<sup>25</sup> explicitly concluded that "the advertising space sold by search engines is not a substitute for the space sold directly or indirectly by [online] publishers or vice versa. Or, to put it in terms of merger analysis, the evidence shows that sale of search advertising does not act as a significant constraint on the prices or quality of other online advertising sold directly or indirectly or vice versa." Therefore search advertising is a distinct market.

The European Commission, in its review of the proposed transaction, was less categorical. It concluded that search advertisements and no-search on-line ads are complements rather than substitutes from a publisher's point of view: "There is limited substitution possible between selling ad space for search and selling ad space for non-search".<sup>26</sup> However, since the outcome did not hinge on the definition, the Commission left the exact definition of the product market open.

In the Microsoft/Yahoo! Case, the Commission examined (and on 18 February 2010 cleared) the acquisition of the Yahoo Search Business by Microsoft. In its competitive assessment, the Commission had to consider and weigh up two aspects of the transaction. On the one hand, the two companies involved had a small combined market share which was significantly lower than that of their main competitor, Google, and historically these companies had encountered serious difficulties in competing effectively against Google as separate entities. On the other hand, the concentration was a merger from three to two between the second and third players, in a market where barriers to entry appeared to be high. Overall, the market investigation confirmed that scale is an important factor in order to be an effective competitor in this sector. The market investigation further confirmed that the proposed transaction was perceived as having pro-competition effects, as it would create a stronger competitor to Google. The Commission left the precise market definitions open.

Precedent nonetheless seems to be moving, or to have moved, in the direction of a market for search advertising. In European competition law the question of dominance is then triggered: can Google behave in the market for search advertising to an appreciable extent independently of its customer and competitors, and ultimately of consumers? Answering this question depends on a variety of evidence, for example, relating to market shares of market participants, changes in market share, prices and barriers.

The data cited by Evans (p 367) suggest that in the US in 2007 Google had a market share of search traffic of >60%, having grown from 50% since 2006 and the market share of Google has continued grow. Recent data, see for example monthly comScore reports shows Google with by far the largest market share – a position that is even stronger when related sites and mobile search is included. But perhaps more revealing is the share of search revenues; here estimates by Evercore Partners, indicate that in the US the share of revenues held by Google is 90%, in the UK it is 98% and the global total is 83%.<sup>27</sup> Its worldwide cost per click was estimated at \$2.00 as against \$0.75 for Yahoo, the second largest firm in the US. Its revenues per search were also much higher (371-2).

<sup>25</sup>Statement of the Federal Trade Commission Concerning Google/DoubleClick (FTC File No. 071-0171), p.3.

<sup>26</sup>Julia Brockhoff et al. 'Google/DoubleClick: the first test for the Commission's non-horizontal merger guidelines.' Competition Policy Newsletter, no 2 2008, pp54-5.

<sup>27</sup>See Evercore Partners equity research paper on Google, published 28th September 2010, page 5.

## comScore Explicit Core Search Share Report\*

January 2011 vs. December 2010

Total U.S. – Home/Work/University Locations

Source: comScore qSearch

Core Search Entity	Explicit Core Search Share (%)		
	Dec-10	Jan-11	Point Change
Total Explicit Core Search	100.0%	100.0%	N/A
Google Sites	66.6%	65.6%	-1.0
Yahoo! Sites	16.0%	16.1%	0.1
Microsoft Sites	12.0%	13.1%	1.1
Ask Network	3.5%	3.4%	-0.1
AOL LLC Network	1.9%	1.7%	-0.2

\*“Explicit Core Search” excludes contextually driven searches that do not reflect specific user intent to interact with the search results.

As noted by the comScore report: “Nearly 17 billion explicit core searches were conducted in January. Google Sites ranked first with 11.1 billion searches. Yahoo! Sites came in second with 2.7 billion, followed by Microsoft Sites with 2.2 billion (up 13 percent), Ask Network with 576 million and AOL LLC Network with 296 million.”<sup>28</sup>

Since Google actually powers AOL and Ask, and a great many syndication sites, it is arguable that queries on their sites should be included in Google’s market share, which results in a share in the US of around 75%.

Similar data for Europe shows a market share of around 95% – though comScore data for Europe (unlike the US) includes in the market share calculations all of the queries that users do on sites **that are not general search sites (and where queries are not monetised by ads)**. In particular, comScore includes queries on Amazon, eBay, Facebook, Yandex etc.

These assumptions are consistent with the US Department of Justice’s doubts about a proposed tie up between Google and Yahoo! in relation to search advertising. Famously, the story began with an attempt by Microsoft to buy Yahoo!. In contradistinction to Google’s general opposition to intervention, Google petitioned the government to block the bid, thereby illustrating, according to the wry Auletta (p.246), Emerson’s dictum that “a foolish consistency is the hobgoblin of little minds” (in other words Google did what any other company would have done on receipt of advice from their lawyers concerning how to maximise shareholder value). Going further, Google announced that it would become the selling agent for a large part of Yahoo!’s search advertisements. But when large numbers of customers objected, and the Department of Justice indicated that it would intervene, reportedly just three hours before the Department was to file anti-trust charges, Google dropped the plan.

<sup>28</sup>[http://www.comscore.com/Press\\_Events/Press\\_Releases/2011/2/comScore\\_Releases\\_January\\_2011\\_U.S.\\_Search\\_Engine\\_Rankings](http://www.comscore.com/Press_Events/Press_Releases/2011/2/comScore_Releases_January_2011_U.S._Search_Engine_Rankings)

The objections to the Google Yahoo! tie up were based on an explicit recognition that Internet search advertising and Internet search syndication are relevant anti-trust markets, in each of which Google alone had a market share of more than 70% and Google and Yahoo! combined had a share of more than 90%. The DoJ concluded, unsurprisingly, that under the proposed arrangement, Yahoo!'s competition would have been blunted immediately.<sup>29</sup>

The market share of Google in European search markets could, *prime facie*, lead to designation of dominance. The question then becomes what would flow from this categorisation? In the first instance, not very much. It is not a problem under European competition law to be dominant, only to abuse that dominance. Is Google likely to do it? Previous experience suggests that a proven abuse of excessive pricing is unlikely: it is too hard to show. The more likely charge is of foreclosure of neighbouring advertiser-related markets. We will therefore quickly review these.

Google has also entered and become a major player in the market for online display advertising. This has been transformed by the application of search advertising techniques. The new technologies permitted (at a high level of generality) the same kind of intermediation in a two-sided market which Google had applied to search advertising.

In pursuit of this goal in advertising Google (in 2007) bid for DoubleClick. As Auletta puts it (p 174):

*“DoubleClick was as dominant in its arena, placing display advertising – as Google was in placing text ads. DoubleClick provides the digital platform which allows sites like MySpace to sell online ads and advertisers and ad agencies to buy them, with DoubleClick culling from its data base the information that targets the ads.”*

In other words, DoubleClick was in the ad server market: it ensured, once an advertiser had bought space, that the correct advertisement appeared in (was served to) the right place at the right time. The tools which accomplish this task can also be employed to measure the performance of the advertisement, for example by tracking the behaviour of the user, via recording of click-through rates etc.

Because search and non-search advertising are considered to be in separate markets (and because DoubleClick was essentially an intermediary rather than a supplier of non-search ads), the merger did not create the same kind of 'horizontal' problem as the proposed Google/Yahoo! tie-up. But it did raise questions as to whether the combined entity would be able to use its strength in one market to damage competitors in the other. Would Google be able to leverage DoubleClick's leading position in advertising in the market for online ad intermediation services? For various reasons, the Commission thought the evidence was inconclusive. Would Google be able to leverage its position in search ads in the display ads market? Again the Commission thought this had not been proven to the necessary standards.

Google's next major acquisition was AdMob.

AdMob is active in the mobile in-application display [MIAD] marketplace. That is, it places advertisements in applications available on the mobile broadband market. Google says that the acquisition will:

- enable advertisers better to engage with AdMob's ad formats

<sup>29</sup>DOJ press Release, Yahoo! Inc and Google Inc Abandon their Advertising Agreement, Nov 5, 2008.

- allow publishers and developers to monetise their content more effectively, and allow users to see more relevant advertisement while on the move

As users on the move may be particularly susceptible to location-specific advertising, click-through rates on mobile advertisements are expected to rise.

The deal fell below EU thresholds and was examined in the US only. It was not clear whether the FTC would explicitly identify a distinct MIAD market. If so, according to some estimates, the merger might be in trouble. While Google said there are more than a dozen mobile ad networks, others say that the combined entity may have 75% of the market, and that the other firms are small private companies (one of which, however, Quattro Wireless, was in the course of being acquired by Apple, reportedly for one third of the \$750 million offered by Google for AdMob).

In the event, the FTC cleared the merger.<sup>30</sup> It stated that although the combination of the two leading mobile advertising networks raised serious antitrust issues, the FTC's concerns ultimately were overshadowed by recent developments in the market, most notably a move by Apple to launch its own, competing mobile ad network.

### ITA Software Inc

In the summer of 2010 Google announced its intention to acquire ITA Software Inc for \$700m. ITA provides software for the travel industry and overall, ITA's software handles about 65% of direct, online air-travel bookings for airlines. The travel market is large – over 50% of travel sales are consummated online<sup>31</sup> and the size of the online travel market is estimated at around \$80bn.<sup>32</sup> The ITA software drives the functionality on many travel comparison sites and travel related searches, for example, Expedia Inc., Kayak.com, Sabre Holdings and Farelogix Inc<sup>33</sup> all use ITA software and Bing, relies on data from ITA to power travel searches. Evidence suggests that more than 30% of all search engine traffic to online travel sites flows from Google and post the acquisition it could be possible to re-direct that traffic.<sup>34</sup>

For many commentators the proposed acquisition reflects the inevitable leverage of the dominance Google holds in search into a potentially dominant position in a related but vertical market. The concern is that in acquiring ITA software new restrictions and fees will be levied on airlines and competitors in the travel market giving Google an unfair competitive advantage. Those opposed to the deal have observed that, to date, Google has yet to say it will honour existing contracts and allow equal access to all software upgrades – the worry is of serial degradation of the services provided to users of ITA software who are competitors to Google. Moreover, some of those opposed to the acquisition argue that Google could analyse their use of ITA's data to gain an insight into their own proprietary systems for competitive reasons.

In the USA the justice department is reviewing the case and a decision on whether to not to refer the case is expected in early spring 2011.

<sup>30</sup>Statement of the Commission concerning Google/AdMob, FTC file No. 101-0031, May 21 2010.

<sup>31</sup>Jeffrey Rayport, Chairman of digital strategy practice Marketspace LLC in Bloomberg Businessweek, 14th February 2011. [http://www.msnbc.msn.com/id/41580420/ns/business-bloomberg\\_businessweek/](http://www.msnbc.msn.com/id/41580420/ns/business-bloomberg_businessweek/)

<sup>32</sup>A figure, for example quoted by Thomas Catan in his article 'Travel Sites Ally to Block Google Deal', Wall Street Journal, October 25, 2010

<sup>33</sup>These four companies, and others, have formed a coalition called FairSearch.org to persuade the Justice Department to block the Google/ITA deal.

<sup>34</sup>Experian Hitwise quoted in Wall Street Journal, *op cit*

## 6. Google and Access to Content

Expanding into content has been a natural for many communications companies over the decades. Any market power that Google can accumulate in content markets related to search or online activities will sit comfortably beside and reinforce its existing activities. Its activities here have, however, been subject to considerable controversy. Here, we discuss two: Google Book Search, and access to on-line news.

### Google Book Search.

Google Book Search is an ambitious plan ultimately to digitise every book in any language found in the world's libraries regardless of their copyright status. It started as a plan to scan and index books, but later changed into a scheme to scan and sell them. It is expected that 15 million books will be scanned in the initial full scale roll-out of the project.

There is an intellectual property problem though. Many books (both in and out of print) are still in copyright but to an unknown (or perhaps dormant) author or publisher – these 'orphan works' have been the focal point of intense debate. Naturally questions have been and continue to be raised as to what should happen in such cases of orphan works. Can Google simply appropriate the copyright?

In October, 2008, Google reached a settlement with authors and publishers to end a class action lawsuit that challenged the legality of the scanning project. Under it, Google will pay \$125 million and introduce a system which will channel payments from book sales. The \$125 million, after deduction of more than a third of that sum for lawyers representing the authors and publishers, will be channelled to authors and publishers whose works are still under copyright and help find copyright holders of 'orphan works', which are in copyright to unknown authors or publishers. The \$45 million earmarked to compensate rights holders amounts to about \$60 per work scanned.

The proposed settlement was subject to a variety of criticisms from authors, publishers and libraries:<sup>35</sup>

- it gives Google a unique competitive advantage, as – absent another agreement – only they can legally exploit orphan works. Google argues that its position can be replicated, but it is unlikely to be practicable to do so. Publishers are also concerned that Google may exploit this position in negotiations over new works, which fall outside the agreement
- the precedent of over-ruling copyright protection is not a comfortable one
- institutions can purchase subscriptions which will cover their licence fees, but there is no adequate protection from them on the course of prices in the future
- the revenue split from book sales (37% to Google) is disadvantageous to publishers, especially if it forms a starting point for the split for new works
- the class action only involved certain actors
- non-US publishers and authors are disadvantaged by the deal in various ways

Finally, by enabling Google alone to offer the capability to search millions of books, the proposed settlement would have a major impact on search and search advertising markets, where Google

<sup>35</sup>These come from a number of sources, including Pamela Samuelson, 'The Google Book Settlement: Real Magic or a Trick?' The Economist's Voice, Berkeley Electronic Press, November 2009, and James Grimmelmann, 'The amended Google Books settlement is still exclusive', CPI antitrust Journal, Jan 2010 (2). Pamela Samuelson, The Google Book Settlement as Copyright Reform, September 2010, [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1683589](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1683589)

has market shares significantly above 90%, such as in Europe. Even if a rights holder instructed Google not to commercialise a particular book, the proposed settlement would allow Google to digitise the book, include it in its books database, and conduct research on this database – to the benefit of its search and search advertising offerings, among other things. It would be able to improve its algorithm and respond to more long tail queries than its competitors, use translated works to improve its proprietary translation tool and engage in other non-display uses. As the proposed settlement specifically prohibits research on the database by any service that competes with Google, there is the clear risk that the revised settlement would stifle innovation and harm the Internet.

Significantly, the Department of Justice shared some of the competition concerns.<sup>36</sup> Some of these related to restrictions on retail prices; others to what the DoJ referred to as “a dangerous probability that only Google would have the ability to market to libraries and other institutions a comprehensive digital-book subscription.” (p 28.)

A judgment forthcoming shortly will show how radically the agreement must be revised to meet objectors’ concerns. Given that the basic premise is that the deal will yield a net improvement in economic welfare significant issues remain. As observed by Hausman and Sidak, it is the issue of the distribution of the spoils, of the effect on Google’s economic strength of its forays into content, that remain important.<sup>37</sup>

## Online News

Google already has an agreement with close to 25,000 news sources to include their content in their search engine. Google is determined to increase these agreements which are at the very heart of their business strategy. However, the nature of these relationships is not without its complications as the boundaries between publisher, intermediary, copyright infringement and privacy are, at times, blurred.

Many producers of digital content such as *Agence Presse*, *NewsCorp*, *Viacom*, *Sony Corp.*, *NBC Universal*, *Time Warner Inc.* and *Walt Disney Co.* have all accused Google of infringing their copyrights in one way or the other. In particular they are accused of forcing expensive digital content to be made available for free and searchable via their platform which will eventually attract searchers and advertisers to enhance Google’s CTR and income. Viacom has accused Google of using YouTube to build:

*“a lucrative business out of exploiting the devotion of fans to others’ creative works in order to enrich itself and its corporate parent Google. Their business model, which is based on building traffic and selling advertising off of unlicensed content, is clearly illegal and is in obvious conflict with copyright laws. In fact, YouTube’s strategy has been to avoid taking proactive steps to curtail the infringement on its site, thus generating significant traffic and revenues for itself while shifting the entire burden – and high cost – of monitoring YouTube onto the victims of its infringement.”<sup>38</sup>*

<sup>36</sup>Statement of Interest of the United States of America regarding Proposed Class Settlements.

<sup>37</sup>J Hausman and G Sidak, ‘Google and the proper antitrust scrutiny of orphan books’ *Journal of Competition Law and Economics*, 5 (3) 411-438.

<sup>38</sup>Viacom press release, 3-14-07, accessed via AGIPnews, at [http://www.ag-ip-news.com/getArticle.asp?Art\\_ID=4149&lang=en](http://www.ag-ip-news.com/getArticle.asp?Art_ID=4149&lang=en)

The court ruled that YouTube – owned by Google – cannot be held responsible for the illegal actions of its users, although certain aspects are under appeal.<sup>39</sup> As a consequence this suggests that websites that take reasonable steps to protect the rights of copyright holders are safe from future US lawsuits. What is not clear is whether this ruling will hold in other jurisdictions; for example, the Spanish privacy authority, in January 2011, issued an order requiring Google to remove links to 100 specific articles. Google has contested the order, with parallel arguments to the Viacom case, arguing that it is an intermediary and therefore it cannot be held responsible for all content on the Internet.<sup>40</sup>

## Behavioural Advertising

By tracking a consumer's searches, clicks and purchasing behaviour, it is possible to accumulate information on preferences and behaviour. Google does this:

*"When you visit Google, we send you one or more cookies – a small file containing a string of characters – to your computer or other device that uniquely identifies your browser. We use cookies to improve the quality of our service, including for storing user preferences, improving search results and ad selection, and tracking user trends, such as how people search. Google also uses cookies in its advertising services to help advertisers and publishers serve and manage ads across the web. We may set one or more cookies in your browser when you visit a website, including Google sites that use our advertising services, and view or click on an ad supported by Google's advertising services".* (cited in Spulber p 676, fn 78.)

This account confirms the benefits Google derives from its participation in the several related markets discussed above. To some users, it will be a benefit. To others, concerned about privacy, it will be a net loss.

These issues surfaced at the time of the DoubleClick take-over, when opposition was based in large part upon privacy concerns, but was ruled irrelevant by the FTC majority. The FTC subsequently had a paper on behavioural advertising written for it<sup>41</sup> and held 'town hall' meetings about it.

In a competitive search market, use or non-use of such tracking behaviour would be a dimension of competition. Ideally users would sort themselves according to the relative values they place on privacy and improved search and rival search engines would have to adjust their behaviour to meet consumer expectations.

<sup>39</sup>The cases are *Viacom International Inc et al v. YouTube Inc et al*, U.S. District Court, Southern District of New York, No. 07-02103; and *The Football Association Premier League Ltd et al v. YouTube Inc et al* in the same court, No. 07-03582. Presiding Judge was U.S. District Judge Louis Stanton

<sup>40</sup>Peter Barron, Google's director of external relations for Europe, told the Guardian: "We are disappointed by the actions of the Spanish privacy regulator. Spanish and European law rightly hold the publisher of the material responsible for its content... Requiring intermediaries like search engines to censor material published by others would have a profound, chilling effect on free expression without protecting people's privacy." Source: The Guardian Newspaper, 16th January 2011. <http://www.guardian.co.uk/technology/2011/jan/16/google-court-spain-privacy?INTCMP=SRCH>

<sup>41</sup>Self Regulatory Principles for Online Behavioural Advertising, FTC Staff Report, Feb 2009.

## 7. Google; Innovation, New Services and Bundles, New Markets and Acquisitions

Simply the business strategy of Google is to gather and exploit the information gained from individual searches and assemble this information into products and services of value to advertisers. It does this by delivering new services and bundles into its core, horizontal market for search, and positioning its products and services (and underlying search technology) in adjacent and related vertical markets. A benign view would stress the innovative nature of the activities of Google although the commercial reality could be closer to market foreclosure and an aggressive strategy of technological acquisition. This strategy of Google has focused on many areas, but perhaps of primary interest are the following areas of development:

- Search – extending the reach of Google search into all media and enabling search capabilities to become pro-active and use historical and contextual information (e.g. location)
- “Mobile First”<sup>42</sup> – operating systems especially for high-end mobile devices, most notably Android for mobile handsets, as well as innovative applications
- Cloud based services (such as Gmail, YouTube, Picasa) and the device platforms (such as Chrome) – providing a desktop and mobile environment with applications that place search as the organising principle for the working environment rather than conventional file management systems
- Analytics – double click and Admob

Each of these areas is briefly discussed below.

### Search:

The initial development of PageRank set a new standard for search engines and Google has been able to maintain that technological lead over all others. However, the growth of the web and the diversity of the sources of information and data types (text, audio, visual) have begun to expose the limitation of PageRank (and not surprisingly since it was designed when the Internet was essentially no more than a text based medium). As recently noted by Eric Schmidt, 35 hours of video material are uploaded every minute on to YouTube and there are two billion monetised views per week.<sup>43</sup>

Hence one of the major focal points for Google has to be to enhance the capabilities of search not just in terms of the core algorithms in PageRank but also in terms of handling different media and integrating increasing amounts of context and personal information. In many ways every keystroke can be seen as a search term: what we write is replete with search terms, similarly where we are is the basis for many search enquiries, our historic searches both in themselves and when related to the accumulation of information about our lives, generate search terms.

Google has sought to ensure not only that its search engines delivering results across all media (text, audio and visual), but that the search engines learn and become increasingly capable of using contextual information (such as location, historic searches). As part of this focus on enhanced search Google is seen by many to have established a significant capability in what are

<sup>42</sup>A term often used by Google and Eric Schmidt in his presentations.

<sup>43</sup>Comments made by Eric Schmidt in his lecture at DLD, Munich, January 2011; source for video [http://www.dld-conference.com/videos/video/grand-final-dld11\\_aid\\_2272.html](http://www.dld-conference.com/videos/video/grand-final-dld11_aid_2272.html)

known as programmable search engines.<sup>44</sup> In short programmable search engines are best seen as a new layer in the internal operations of Google search and a new indexing methodology.

## “Mobile First” – Operating Systems

Mobile Internet is the fastest growing area of Internet use and in many regions of the world it is the only mass market access to the Internet. However, access to the mobile web seems to be largely driven by the diffusion of high end smart phones. The importance of these products were stressed by Eric Schmidt in his keynote address at the Mobile World Conference in February 2010 and recent evidence suggests that the users of smart phones are 3 times more likely to use the web and mobile apps than other users (JP Morgan January 2010).

The major focus of Google in this area has been on the Android operating system and most recently the launch of Nexus One (manufactured by HTC for Google). The Android platform is now available across 20 devices, 59 carriers, 48 countries, and 19 languages. The Open Handset Alliance now has 52 members and there are approximately 2075,000 apps within the Android market (compared to approx 127220,000 for the iPhone). Recent data shows that the largest share of the smart phone market, (27%) uses Android, that there are 300000 Android registration per day and that by 2014 current projections expect at least 400n Android handset globally. Further Android is reported profitable today without additional revenues from applications and that in early 2011 the number of number applications in Android Market were, for the first time, greater than those available via Apple.<sup>45</sup>

Considerable focus has been given to Android as an operating platform (as well as specific devices, such as Nexus One) and its impact on mobile operators/carriers (most estimates suggest that the Nexus One will sell in the range of 5-6m units some what similar to sales of the iPhone in its first year). However, the real significance of Android (rather than specific devices) will be in its ability to secure Google as the provider of online advertising in the mobile Internet. According to Google mobile searches have increased 5 times over the past year, Android devices access the web on average 30 times more than other smart phones , and close to 1/3 of all Google searches in Japan are from mobile devices (Barclays capital 6/1/2010). As articulated by JP Morgan, their belief is that Google *“is well positioned to capitalise on the mobile space with its search dominance. Currently, advertisers can elect to place mobile search or content ads through AdWords”*. (JP Morgan, Global equity research 4/1/2010).

By bringing the Internet developer model to the mobile market, it is hoped that increased innovation will make the phone features more attractive, affordable, and user-friendly for the consumer. As the Android open platform becomes widely diffused, more consumers will have access to Google services. Google has introduced many mobile products, including search, Gmail, YouTube, Picasa, maps, Google Apps, as well as unleashing the developer community. Further, the widespread diffusion of Android will support Google by reducing its traffic acquisition costs – for example, in 2009 and 2010 it was thought that Google pays traffic acquisition costs (TAC) to Apple and over the past few years many other similar deals have been reported (e.g. with Dell and Firefox).<sup>46</sup> By driving more traffic directly on to Google sites these TAC fall and its profitability rises.

<sup>44</sup>Some evidence on the work of Google on PSEs is given by patent activity, e.g. the new patents issued to Google in February 2007, including US2007 0038616, and .0038601; 0038603; 0038600; 0038614.

<sup>45</sup>Deutsche Bank, 21/January 2011, op cit

<sup>46</sup>For example see the following post from 2006; <http://seekingalpha.com/article/11288-will-traffic-acquisition-costs-bite-google-back-goog>

## Cloud Based Services and the Desktop

Exploiting Cloud computing plays an integral part in service development and the creation of new bundles by Google – not only does cloud computing bring significantly enhanced processing power to many applications (and as such makes them feasible, such as instantaneous interpretation allowing individuals to speak to each other in their respective mother tongues) it also places search at the centre of the ICT eco-system and provides an integrating technical platform to bring together multiple services and products.

The device infrastructure, whether for the 'desktop' or a mobile device, also remains a critical market for Google. With increasing broadband access to the Internet and the use of cloud based services Internet browsers are increasingly seen as a key service/product market. Google has launched Chrome into the market and is preparing to launch the Chrome operating system. Along with Google desktop, one of the central features of these desktop environments is the importance given to search as the organising principle for the working environment rather than conventional file management systems. Moreover, when intertwined with Chrome as a browser Google has unrivalled access to user data.

There is an expectation (e.g. as argued by Collins Stewart 11/1/2010) that the competitive dynamics in the browser market will shift as the Chrome OS and Chrome browser change end-users interaction with the Web. Such changes in the market are being underscored by the recent decision of the European Commission to impose a remedy on Microsoft obliging it to incorporate a ballot screen listing alternative browsers.

Cloud computing also transforms traditional products into services and, most notably, for many individual users and SMEs cloud computing offers the advantage of accessing not only software as service but also key technical resources, such as processing power and memory. As commented by Collins Stewart (11/1/2010) *"a large portion of 1bn Internet users and the 65mm SMEs are up for grabs, and these large audiences will fuel the growth for free, feature-light but ad-supported office productivity tools and other important business applications delivered online"*. Although these web-based applications are not as feature rich (at the moment) as locally hosted client applications, they are more than fit for purpose and deliver other significant advantages. Most importantly cloud based applications provide anytime and anywhere access to applications as well as the capability to support real time collaborative work.

In recent years Google has acquired a number of firms in the cloud computing area; these include the following

Urchin Software	Online Web analytics
Writely	Web based word processing
Gtalkr	Web based Flash-Based IM client
JotSpot	Online office productivity and collaboration tools
Xunlei	File sharing
Tonic Systems	Presentation software application
Marratech	Video conferencing
GreenBorder	Desktop enterprise security
Panoramio	Photo sharing
Zenter	Presentation application
GrandCentral	VoIP
Postini	On-demand communications security and compliance solutions
reCAPTCHA	Online security
Gizmo5	VoIP
AppJet	Collaborative real-time editor

Source: Google Company reports, Collins Stewart LLC

## Advertising and Analytics

In order to support its advertising business, Google has also sought to strengthen the analytical services it provides. The high profile acquisitions in this area have been DoubleClick for \$3.1 billion and the Admob for \$750 million.

Further, Google TVAds, Google Print Ads and Google Audio Ads have enabled Google to cover an increasing number of the advertising bases. By buying DoubleClick which had the single largest database of consumer profiles outside of Google's, Google now owns a unique database and platform from which to launch targeted advertisements and consequently attract more marketers. As Google acquires more information about the customer, the company tends to increase its ability to benefit from the power of information asymmetries. The cyclic nature of the search ad market means that a dominant player will have more up-to-date information about every market player: customers, auction bidders, investors, and even competitors, as their information circles through the search platform. This cyclic nature of the search market tends to concentrate critical horizontal and vertical market information in the hands of the search engine operator which can have serious consequences on competition, property rights and outright abuse of market position.<sup>47</sup>

Goldman Sachs (equity research 9/11/2009) reports that Admob handles around 10 billion impressions per month, employs about 150 staff, and has raised almost \$50mn from Sequoia

<sup>47</sup>See the case against Google filed by TradeComet.com LLC at [http://www.googleopoly.net/TradeComet\\_v\\_Google.pdf](http://www.googleopoly.net/TradeComet_v_Google.pdf)

Capital and Accel Partners, among others. AdMob serves advertising to around 7,000 mobile publishers such as CBS and AccuWeather, on behalf of advertisers such as Best Buy and Nike. Half of its impressions are in the US, and one quarter in Asia; one quarter of its impressions are on each of Apple and Nokia-brand devices.

In general the acquisition of Admob has extended the capability of Google from search and operating systems into display advertising in the mobile market. This market is ultimately seen as a multi-billion euro market (Goldman Sachs) and one in which Google has the leading player.

Google has also sought other acquisitions to support its activities in the mobile online advertising market. For example, Google recently acquired Teracent whose services allow marketers to deploy an unlimited number of ad creative combinations through a single ad unit, a capability that has been cost and time prohibitive up until now. The technology can tweak images, products, messages, or colours to be optimised depending on factors like geographic location, language, the content of the website, the time of day, or past performance of different ads. As observed by JP Morgan the acquisition of Teracent, whose services help to optimise each ad impression, could deliver higher CPMs for Google.<sup>48</sup> Moreover, the acquisition of Teracnet and other relatively recent acquisitions reinforce the ability of Google to create a dominant position in the search advertising market. In summary whilst Google may present its activities (product and service innovation as well as its acquisitions) as disparate, there are core commonalities and a single purpose. In this way Google is extending the range and scope of services it provides into related markets (through services such as Google docs, Gmail, YouTube). Thus contrary to the view that these new services are heterogeneous and have little in common other than being designed and implemented around a web 2.0 vision of the Internet; these services are extending the reach of the Google platform and placing search, in which Google has a dominant market position, as the core mechanism for ordering and delivering value to customers – and by implication allowing Google to extract value from the information provided through search to create new revenues through services to online advertisers. The extension of the platform into related markets is not neutral and raises many significant competition issues, such as the foreclosures of related markets further entrenching the dominant position of Google in core markets. Whilst Google may merely present the strategy as one entirely focused on monetizing search through online advertising revenues in multiple markets the competition effects are likely to be profound.

<sup>48</sup>JP Morgan 20/1/2010

## 8. Interpretation: Extending the Scope and Relevance of Search as a Multi-side Platform

The centrality of search<sup>49</sup> and the dominant role of Google in the market for search has been discussed above. However, Google is a multi-product firm and of interest is the way in which Google is able to leverage its resources into new markets and thereby change the nature of competition in those markets. So what does all this add up to? Let us return to Spulber's<sup>50</sup> circular flow of information – the two-sided market in which the Internet search firm defines product groups and auctions positions in related search terms, while advertisers reveal information through their bids and the advertisements they place, seeking to attract consumers, who reveal their search interests even when not actively shopping and then reveal their potential buying behaviour by 'clicking through'.

For the search firm, the beauty of it is that the flow is circular. The search firm provides new content as it updates its search results to include new web pages. Consumers make new searches with different key words, and vary their behaviour in clicking on advertisements and making purchases. This new or amended information is relayed to advertisers who bid in revised position auctions.

In this circular process, economies of scale are likely to operate at several layers. First and foremost, the process of indexing web pages is a cost independent of the number of searches made. Then the unit costs of checking against the index may fall with volume. In relation to advertising sales, a larger number of advertisers will permit greater granularity in key words and a closer match with consumer preferences. These forces are at the core of creating and sustaining the market dominance held by Google.

What happens if these forces lead to high levels of concentration in search markets? Absent of restraints imposed by effective enforcement of competition law, the net benefits of consumers using the service will diminish. "Where there is less competition, the media firm may not provide the same quality and quantity of information that would be provided in a competitive market" (Spulber, p 674).

Another way of putting essentially the same proposition is that in a non-competitive market, consumers are remunerated less well for the information about their preference which their on-line behaviour provides.

As far as advertisers are concerned, the search firm may be able to use its market power to restrict supply and increase revenue, and/or practise price discrimination more effectively. These considerations led Spulber to conclude (p 682) that achieving the full economic benefits of the map of commerce necessarily depends on vigorous competition between search terms.

But that is not all. The consequences of scale in search described above also favour entry by a dominant search firm into ancillary or vertically and horizontally-related markets. Thus Google employs some of the same methods as in search advertising to sell on different advertising markets – most obviously on-line display advertising but also on TV, radio and other media.

<sup>49</sup>The Oxford Internet Institute survey shows that over the period 2005 – 2009 Internet users have increasingly relied on Google to access specific website rather than directly access the sites. The data shows that in 2009 10% of users directly access specific pages (down from 19% in 2005) and that 64% access information through "search engines such as Google"; up from 19% in 2005. Other data on the traffic driven to a site from search engines seems to support the thesis that well branded and reference sites (e.g. YouTube, BBC, CNN) receive between 10 and 15% of their traffic via search engines – for other sites the percentage is typically in the region of 80%. Source data can be accessed, for example, at [www.alexam.com](http://www.alexam.com)

<sup>50</sup>Spulder; 2009, pp 650-2, *op cit*.

As shown above, Google has also entered or strengthened its position in vertically related markets in ad serving, and mobile in-application display. This strengthening of market positions creates enhanced leveraging opportunities and has the effect of making entry into all markets more difficult.

## 9. Overview of Network Effects; Competition Analysis and Remedies

The paper has discussed the prevalence of network effects surrounding the products and services offered by Google. Not only does Google provide a traditional set of network effects based on its operations (resting for example, on its physical networks and server farms as well as the aggregated data/results collected through the use of its search algorithms) but it has also created several virtual networks (based on the synergies created by the diversity of products and services Google offers in related markets – of which Google Books is highlighted in this paper – others include Gmail and Google docs). In all these cases the network effects created by Google are intertwined and consist of clearly identifiable nodes and links. Moreover, the increasing returns to consumption that define the network effects manifest themselves in several ways – for consumers the increasing returns to scale clearly manifest themselves in enhanced search results (advantages that Google is continuing to deliver to consumers for example through extending its activities into mobile applications) and to advertisers and their willingness to pay for keywords (based on being offered enhanced opportunities to connect with potential consumers).

Markets that have network effects exhibit particular features.<sup>51</sup> Of particular interest in the analysis of the market for search is the fact that a platform owner in such a market can choose what to charge each side. The network owner can therefore internalise or distribute externalities as it wishes. A network owner with market power can thus create or expand barriers to entry as it chooses. In the case of search, other features of markets with network effects, such as technical standards, path dependency and the importance of competition *for* rather *in* the market all help to explain the dominant position that Google has secured across many markets. What is clear is that Google has sought to leverage its dominant position and its acquisition strategy to underline its ability to establish a strong market position not just in search but also a wide range of related markets.

Another perspective in assessing the network effects is to review those features in the market which limit the extent to which contestability is meaningful, in other words what are the impediments to contestability. The narrative that Google has shaped around contestability is expressed simply as “a click away” – the implication that any consumer is able to migrate to another platform instantaneously with almost zero switching costs. This narrative has been carefully crafted by Google, for example, the phrase: “As we put it, the competition is only a click away” has become a strapline for capturing, from the perspective of Google, the inherent intensively competitive nature of the Internet and the market for search. However, what this carefully articulated story fails to discuss are the impediments to contestability, for example the increasing array of defaults on software platforms and applications that mandate Google services. These impediments are multifarious and operate over time and in space. Temporally, the dominance of Google at any one time in terms of both searches and searchers leads to a perception of better results. In other words consumers are only likely to move away if there is a “second Google” out there. Fundamentally, as the literature describes, the major structural impediment, is when a platform has become so embedded in the behaviour of users on both sides of the market, the nature of competition shifts to one for the market rather than competition within the market. Within such a perspective the entry barriers are formidable and the actions of individual consumers close to futile. Furthermore, the

<sup>51</sup>(for a fuller discussion of these issues see Nicholas Economides(2004), *Competition Policy in Network Industries: an introduction*, Working paper, #04-23, [www.NETinst.org](http://www.NETinst.org)).

ubiquitous presence of Google in the market (including the search on many proprietary websites) means that in a large percentage of cases a “click away” effectively takes a consumer back into Google. Similarly for advertisers the dominant market position for Google creates opportunities to access more targeted markets and enable advertisers to ‘buy’ more precise terms – this latter feature could result in lower costs for precise key words in auctions and higher CTR.

The impediments to contestability may also be found in the nature of search itself – the scale effects and path dependencies create forms of consumer and advertiser lock-in regardless of the technical efficacy of the search algorithms. So whilst Google continue to remonstrate that their dominance is simply a matter of doing this better and learning by doing<sup>52</sup> the consumer experience and behaviour is one that tends towards ‘lock-in’ and ‘path dependencies’. The existence of such behaviours is consistent with the predictions of economic theory.

The implication of the economic analysis is that markets which exhibit strong network effects will have outcomes different to those that would exist in a competitive market. Such outcomes raise prime facie competition concerns and as noted by Evans *“there is no reason to believe that anti-competitive problems are more or less prevalent in two-sided industries than others... however... antitrust analysis of these industries should heed the economic principles that govern pricing and investment decisions in these industries. Prices do not and prices cannot follow marginal costs in each side of the markets. Price levels, price structure and investment strategies must optimise output by harvesting the indirect network effects available on both sides”*.<sup>53</sup>

However, one of the key competition policy questions in network industries is assessing the damage to consumer welfare rather than harm to competitors. This perspective raises the question as to whether or not policy makers have a set of expectations or even normative frameworks which should inform the regulation, if any, of a network industry. Hence the debate shifts from a purely economic debate to an analysis of the impact of the network industry, in this case search, upon broader economic and social policy objectives.

Further to the focus of any discussion of remedies in network industries, because of the potential risk of monopoly, may default towards regulation (both ex-ante and ex-post) rather than traditional anti-trust and competition law interventions (such as fines and divestitures). The focus on regulation rather than ‘remedies’ has parallels with other network industries, such as airlines, banking and telecommunications. In all cases the regulatory framework seeks to address issues in terms of both ex-ante and ex-post instruments.

The product and service innovations that were created with the introduction of CRS in the airline industry provide a set of insights into the regulation of a platform where a dominant position, or the potential for dominance, could lead to anti-competitive outcomes. The innovative potential to reshape the airline operations and the advantages associated with a dominant CRS system drove a wide ranging policy debate on the potential anti-competitive outcomes – a debate which led to the introduction of ex-ante rules on CRS systems. Whilst this debate was largely framed in the 1990’s (and within the technical possibilities of that time), the implications of the policy debate remain valid and of potential interest in reviewing the competitive dynamics in search. Not only did the policy interventions drive an openness into the development of CRS systems,

<sup>52</sup>“The answer, at least in my opinion, is a much older economic concept called “learning by doing” that was first formalised by Nobel Laureate Kenneth Arrow back in 1962. It refers to the widely-observed phenomenon that the longer a company has been doing something, the better it gets at doing it.” Hal Varian, Google official blog – <http://googleblog.blogspot.com/2008/02/our-secret-sauce.html>

<sup>53</sup>Evans, D. S., *The antitrust economics of two –sided markets*

it also introduced transparency into the market so that all firms could respond to changes in demand with relatively complete information about market transactions. The policy interventions recognised that the enhanced information to consumers should not be coloured by the dominant position of a platform owner. It was held as axiomatic that information transparency would enable suppliers to innovate on the best market information available thereby bring gains to consumers.

Other parallels regarding ex-ante rules over platforms can be found with regard to television programme guides in the broadcasting sector. In short, the platform owner is unable to configure the programme guides (APIs) in a way that distorts competition in the market or consumer choice. In both these cases the policy interventions have largely been judged to have been successful and support pro-competitive outcomes whilst facilitating innovation and the adoption of new technologies.

These examples illustrate that there is a potentially important role for public policy regulation driven from a legitimate concern about the effects of a dominant position in platform, network industry. This is not news – so the question is what potential interventions, if any, are appropriate to the dominance held by Google. In particular what are the interventions, if any, that foster innovation and increase consumer welfare.

It can be argued that there are several areas of search markets where the focus of a competition inquiry would be insightful. The first of these is the availability of information and a clearer understanding of the market dynamics. The second area is the ways in which interventions, if any, can foster greater competition *within* the market, particularly for search and, thirdly, what interventions, if any, are useful in ensuring effective competition *for* the market.

In the first instance it is inevitable that the future competitive dynamics in the market are not well understood although there is considerable experience and insights which can be used to inform any review of the competitive nature of search and related markets. The interplay between technical innovations, market dominance and the mechanisms employed by Google within its search engine, for example around traffic acquisition and the precise implementation of the auction results, is not well understood. It is clear that at the heart of the current EC competition 'enquiry' there is asymmetric information about how the market functions and the degree to which management decisions influence outcomes.<sup>54</sup> For example, in the case of Foundem, despite a consistent retort by Google that its search results are neutral, the company's own management was able to intervene in the search engine functionality and display of search results to provide remedies, albeit limited ones. Moreover, it is not clear how the traffic acquisition market operates and thus drives the financial viability of many websites; the opaqueness of the market does not, *prime facie*, suggest that the outcomes are welfare maximising. Thus, for example, what is the basis of the traffic acquisition relationship between Google and Apple for traffic generated by the iPhone and iPad?

This creates a clear opportunity for the competition authorities to ensure that more information is in the public domain and that the tools within their reach are used to bring about greater informational transparency.

In terms of competition *within* the market the policy debate needs to be informed by an understanding of the success or otherwise of alternative search engines to Google. The *prime*

<sup>54</sup>Recent work by Ben Edelman has highlighted the ability to introduce bias into search results, see for example, <http://www.benedelman.org/searchbias/>

*facie* evidence shows that numerous search engines have failed to gain market presence. What is clear is that the success and failures of search engines produces a heterogeneous set of results; some of the early search engines, such as Alta Vista, appear to have been eclipsed by the technical innovation over time and the simply better algorithms of other search engines. In some case, such as Cuil and Hakia, there appears to be clear technical differentiation from (perhaps even superiority over Google), yet these search engines are failing to make significant inroads into the market. The *prime facie* evidence suggest that there are features in the market over and beyond “being better” that determine the competitive outcomes.

The key question here is what remedies, if any, could be useful. The guiding principle here could focus around two key issues. Firstly, would greater (informational) visibility of the search terms and keywords and related transactions taking place over the dominant platform enable others to compete? For example could the population of search terms and key words be made available through a clearing house so that all firms had the same basic demand profiles? Could public policy interventions further limit the period over which search data is kept and so narrow the difference in information asymmetries between firms.<sup>55</sup>

Secondly are there (essential) facilities, owned by the dominant firm, to which mandated wholesale access would be appropriate. Whilst the focus tends to be on the informational and technical aspect of the search algorithms the business model of Google also rests on a significant physical/technical infrastructure. This infrastructure has two dimensions, the first is the physical hardware in terms of networks and server farms; the second is in terms of the meta-descriptions of the Internet – derived from bots and spiders. Would ‘wholesale’ access to these resources enhance competition within the market for search? Would such access create the potential for a level playing field and as such allow the policy makers to be confident that dominance in the market for search (and therefore in other related markets) is a result of competitive outcomes rather than anti-competitive behaviour?

Further, there is a debate over the extent to which policy intervention could foster competition *for* the market. An aspect of this debate is already raging in terms of net neutrality. In this debate the concern is essentially over the generation and (re)distribution of revenues between two competing networks/platforms (telecommunications service providers, such as AT&T, and service providers at the application layer, such as Google). The outcome of the debate over net neutrality will set a framework for competition *for* a market. Other aspects of policy debate around competition for the market could focus not on the specific market for search but on the extent to which search is becoming the entry point to other related markets. Here the concern would be the extent to which dominance in search could lead to the ability to foreclose competition in related markets. A possible example here is the extent to which Google is using search as the organising principle for building and delivering services in the mobile communications market. For example, re-interpreting location data and time of day data as a search term and merging these with ‘adword’ services and other Google services (such as maps and street view) could be seen as a consumer friendly innovation but it also forecloses locational information services to potential new entrants.

Another area of policy debate could emerge from the acquisitions of Google. In two notable cases, DoubleClick and Admob, the acquisitions were allowed to go ahead. However, on the basis of the arguments advanced in this paper there must remain a cautious approach to the approval of acquisitions by Google in seemingly new or unrelated markets. In part ensuring effective

<sup>55</sup>To date the debate over the period over which search results are kept has been framed in terms of privacy concerns but increasingly there is a competition dynamic to the debate; something policy makers hereto have not focused upon.

competition for *the* market can only be secured if sufficiently innovative and independent firms exist to offer credible solutions to both sides of the market.

In summary, however, it is clear that common throughout all these areas of analysis is the lack of information and transparency in the market. As a result the debate over the existence, or otherwise, of anti-competitive behaviour is reduced ultimately to one of a traded assertions rather than investigation and an evidence based policy dialogue. As Google moves through its teenage years so the competition authorities need to engage and ensure that the innovative and disruptive behaviour that inevitably follows the firm fosters further broadly based economic transformation and growth and does not degenerate into abusive behaviour. A good starting point, as argued here, is to ensure more information and transparency is brought into the public realm.

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## About ICOMP

ICOMP, the Initiative for a Competitive Online Marketplace, is an industry initiative for businesses and organisations involved in Internet commerce. Its overall objective is the sustainable growth of the Internet and key goals are to encourage competition, transparency, data privacy and respect for intellectual property protection as well as the adoption of best practices to promote online creativity, innovation, safety and trust.

As an organisation concerned with the Internet, ICOMP brings together companies operating in the online marketplace across content, infrastructure and services sectors to identify and promote best practices. ICOMP helps to educate and inform stakeholders and decision makers on how the online marketplace functions and the challenges being faced by those who operate within it.

Sixty companies, trade associations, consumer organisations and individuals are members of ICOMP and have endorsed ICOMP's principles. These members represent 17 countries across Europe, North America and the Middle East. ICOMP is funded by member contributions, as well as sponsorship from Microsoft. Burson-Marsteller acts as its Secretariat, and Lord Alan Watson is ICOMP's Chairman.





