



Faculty of Economics

Economics and Finance Degree Program

GOOGLE AND ANTITRUST

Is Google god and does anyone control god?

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To Gilad Shalit - we are waiting for your release and for you to come back home,

Acknowledgments

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1. Introduction

The antitrust landscape changed dramatically in the last decade. Both, the Department of Justice in the U.S and the European Commission, focus their attention on abuse of dominance actions by innovative companies in high-tech industries such as Microsoft, *Intel* and Google, which are characterized by uncertainty, complexity and dynamic innovation. On the one hand, successful firms such as Google, which compete in markets characterized by innovation, rapid technological change, and a strong reliance on intellectual property rights, are especially likely, and especially problematic, targets. On the other hand, there is a substantial concern that antitrust error in the form of successful interventions against pro-competitive innovations and business practices will hinder economic growth.

The main pillar of my thesis, as well states by Manne and Wright (2011), is "not that we know that Google's conduct is procompetitive, but rather that the very uncertainty surrounding it counsels caution, not aggression".

Part I will point the main difference between the U.S and the European approach towards abuse of dominance, will argue and criticize the European Commission 2008 Guidance Paper on anticompetitive foreclosure and will try to give an optimal design framework to legal rules.

Part II outlines the main features of IT markets in order to set the stage for an assessment of the case against Google.

Part III will discuss Google's history, business conducts, the allegation against Google presented by complainants and scholars' opinion on Google's actions.

Part IV will conclude with my beliefs on what is going to happen with Google and other innovative businesses and where antitrust should, and will, take us.

PART I

2.1 Rules on abuse of dominance: US vs. EU

Most competition law around the globe deal primarily with the following three areas: anti-competitive agreements, the abuse of dominant position and mergers. We might have noticed that competition laws of many jurisdictions do not contain provisions on the abuse of dominance as such. In Australia, for example, they use the concept of misuse of market power, while in the U.S they use terms such as monopoly or attempt to monopolize. Although they cover similar situations, there are numbers of differences among them ranging from the definition of dominance, identification of the relevant market and factors that should be considered when determining dominant position. This section will attempt to compare the rules on abuse of dominance of the U.S and the European Community.

The Treaties of Rome were signed on March 25, 1957 by the following countries: Belgium, France, Italy, Luxembourg, Netherlands, and West Germany. The two treaties were: (i) the Treaty establishing the European Atomic Energy Community; and (ii) the Treaty establishing the European Economic Community which was renamed, the Treaty establishing the European Community, upon the entry into force of the Treaty of Maastricht, and in 2009, renamed the Treaty on the functioning of the European Union (TFEU) upon the entry into force of the Treaty of Lisbon. We will focus our attention on Article 82 EC which states that "any abuse by one or more undertakings of a dominant position within the common market or in a substantial part of it shall be prohibited as incompatible with the common market in so far as it may affect trade between Member States".

In the United States, the Sherman Antitrust Act, which was passed in 1890, propose was to oppose the combination of entities that could potentially harm competition such as, monopolies or cartels. We will focus our attention on Section 2 of the Sherman Act which states that "Every person who shall monopolize, or attempt to monopolize, or combine or

conspire with any other person or persons, to monopolize any part of the trade or commerce among the several States, or with foreign nations, shall be deemed guilty of a felony, and, on conviction thereof, shall be punished by fine not exceeding \$1,000,000,000 if a corporation, or, if any other person, \$1,000,000, or by imprisonment not exceeding 10 years, or by both said punishments, in the direction of the court."

Article 82 of the Treaty establishing the European Community is the counterpart to the anti-monopolization provisions contained in Section 2 of the Sherman Act. Today, there are two common myths: the first is that Article 82 EC pits innovative American businesses against bureaucratic European regulations. The second is that the Article lacks an economic-based approach. The reality, to Dibadj's opinion, is quite different. He argues that an appreciation for Article 82 can only emerge through a contextual analysis of its historical origins and its regulatory role within a broader policy of European economic integration. Companies like IBM, Coca-Cola, Microsoft, *Intel* and Apple, have all come under European scrutiny and have not faced comparable scrutiny in the United States. This is an example that Europe is not as bureaucratic as it seems. The great divergence between competition policies of the United States and Europe are due to the differences between these two terms: "monopolization" in the U.S and "abuse of dominance" in the EU. Furthermore, Dibadj believes that, the popular thinking today, that the current American perspective on monopoly is superior and that in Europe it is easily assumed that anticompetitive conduct exists, is wrong. He argues that with the lax of antitrust enforcement at home, American competitors have found it necessary to turn to Europe for redress against monopolistic abuses.

The European approach to dominant firms may be usefully understood based on two factors: its historical roots in the Austrian and German deliberation about market regulations, and its role as an instrument of European market integration. Austrian intellectuals believed in the need to establish a separate legal system to punish anticompetitive behavior and that the objective of protecting competition has little to do with the traditional goals and methods of

civil and criminal law. It thus required a specific legal regime to achieve this objective. In the U.S, on the contrary, the tendency is to employ the existing conceptual and procedural molds of criminal and civil law to deal with competition issues. They Austrian further believed that, Americans overemphasis on cartel-busting had led to the emergence of monopolies and thus have increased economic concentration. At the beginning of the twentieth century, the German Ordo-Liberalism joined the debate and claimed "that competitive rivalry should be protected as such". After all, consumers generally prefer to have more competitors rather than fewer because this might actually protect them more than policies focused only on allocative efficiency. In other words, a market structure with many rivals may be more protective of consumer welfare than a market that is simply efficient. This, at least to some extent, may provide an explanation for why Europeans interpret Article 82 in a manner that, to many American tastes, might seem too protective of competitors.

The intersection between market integration and competition law provides the second piece to this complicated puzzle. In Europe there were goals as to the establishing of a single common market for goods and services, promoting harmonious development and economic expansion, increasing living standards, and encouraging a closer and deeper relationship between EU Member States. Generally, European competition law is not just about microeconomics but a fulfillment of a macroeconomic trade policy.

In the United States, the approach is not based on a rich history of antitrust regulation, but only on a particular brand of antitrust theory championed known as the "Chicago School" that emphasizes the role of market forces. Terms like "consumer welfare" and "efficiency", which do not appear in the EU, come directly from them. This approach, to Dibadj opinion, ignores the legislative history of antitrust law and the advances in the economics of industrial organization, including the understanding of scale, transaction costs, dynamic analysis and core theory.

In conclusion, the divergence does not imply that one set of attitudes is always right or wrong; rather, it reflects a different set of concerns toward monopoly. In marked contrast to the prevailing wisdom that strongly urges that the European should adopt the contemporary American approach to monopolization, this paper suggests precisely the opposite: a current interpretation of Section 2 has more to learn from Article 82 than the other way around. Analysis of Article 82's history, purpose and context suggest that it is emblematic of the useful role competition laws can play as regulatory tools.

Another point of view on this matter, was given by Heike Schweitzer (2007), in her article "Parallels and Differences in the Attitudes towards Single-Firm Conduct: What are the Reasons?" . In this Article, Schweitzer tried to compare U.S and EU competition law attitudes towards exploitative abuses, predatory prices and refusals to deal. As we previously mentioned, antitrust authorities on both sides of the Atlantic are reconsidering the tests to be applied in order to distinguish between lawful competition on the merits and exclusionary conduct. On the one hand, it has been observed that in the U.S the tests for identifying anti-competitive single-firm conduct, under Section 2 of Sherman Act, are generally more narrowly constructed than the tests applied in the EU under Article 82. The common explanation is the regulatory tendency of EU competition law towards the German ordoliberal influence. This common explanation is, although, on the contrary to Pinar Akman's (2007) work, which states that a legal provision can only be properly understood once there is an understanding of the circumstances of its adoption, since only that can explain why the provision was needed in the first instance. Thus, for example, when analyzing the issues of efficiency, productive efficiency and dominance, Article 82EC clearly does not prohibit dominance and it is apparent that the drafters never had any intention of preventing undertakings from becoming more efficient even if this led to larger and more dominant undertakings. At that time, it was necessary to increase the wealth of Europe after World War II and this was the priority for the Common Market. Improving efficiency therefore was a

principle aim for the drafters, which is evidence that there was limited, if any, ordoliberal influence or intention to Article 82EC. On the other hand, as far as the enforcement activity of relevant public agencies is concerned, cases on anti-competitive single-firm conduct are relatively rare in both sides of the ocean, but nevertheless European agencies appear to be more active than their American counterparts.

In this section, I will briefly explain her point of view: Similar to Dibadj, Schweitzer claims that, Article 82 is one of the pillars of a "system ensuring that competition in the internal market is not distorted", and from which efficiency, consumer welfare and economic progress is expected to result. Hence, it has been interpreted with the view to the market integration goal and the idea to give effectiveness to the fundamental freedoms against the exercise of private power to preclude market access or to eliminate competitors. When looking back at the history of both approaches, we might find the roots of the difference: in the U.S, the Chicago School's reform has put consumer welfare as the main goal of antitrust law and price theory as the method based on which to predict consumer welfare effects. When being applied to unilateral conduct, this was translated into highly permissive approach: most unilateral practices would, to Chicago School scholars, typically create efficiency, and firms with monopoly power would lack incentives to engage in welfare reducing practices. Thus, most unilateral practices should therefore be lawful per se. This goes well along with the tests currently applied under Section 2 to identify illegal monopolization which tend to be under-inclusive conceptually and can create a significant number of "false negatives" (cases where a conduct should be classified as anti-competitive, but fails to do so). In Europe, the main goal after World War II was to create a common market which will be backed up by competition rules. As we know, the design of the Treaty of Rome was controversial among the negotiating parties, and after a long period of negotiation, the German principles, on the prohibition of the abuse of dominance, were basically accepted. Thus, we can see that Article 82 EC came closest to the original German proposals and had a significant influence on the shape of the EC competition law. Summing up, Article 82 EC is based on the assumption that competition

will typically result in more innovation and efficiency than monopoly. It is preferable to let the market enforce efficiency and innovation than to rely on the announced efficiency goals of private monopolist, or on appraisals of likely efficiencies by competition authorities and courts. Moreover, the European Court of Justice (ECJ) generally prefers a balancing approach to protecting market access for competitors: an exclusionary effect disadvantageous to competition may be counterbalanced by advantages in terms of efficiency. But if the exclusionary effect bears no relation to the advantage for the market and consumers, or goes beyond what is necessary to attain those advantages, it will be regarded as an abuse. Lastly, Article 82 is not only about protecting outcome efficiency, but it is about protecting individual rights of competitors at the same time. This is maybe the best way to show that EU competition law is about protecting competitors instead of competition. The difference between EU and U.S approach is that EU competition law, based on the above, assumes an individual right of each competitor not to be excluded by illegal acts, whether or not the exclusion results in a verifiable overall decrease of competition and efficiency in the market. U.S antitrust tends to require a showing of verifiable effect in the market. To Schweitzer's opinion, the insight we can gain by looking at the history of Section 2 Sherman Act and Article 2 EC, are limited. Thus we should focus on the three main differences, to his point of view, which stand for the divergence of the interpretation of the above: (i) exploitative abuses; (ii) predatory prices; and (iii) refusals to deal:

- i. Exploitation of monopoly power under Section 2 Sherman Act and Article 82 EC: Only Article 82 addresses exploitative abuses which implies building judgments about price and output decisions of dominant firm, and thus often comes into the vicinity of regulatory supervision. According to this view, competition authorities are, under Article 82, required to ensure that dominant firms set output and price as if they operated in competitive market ("as-if" competition approach). Section 2 Sherman Act, on the contrary, does not control the exercise of monopoly power, but only its acquisition or maintenance because the underlying assumption is that monopoly

position will be a transitory one. Monopoly prices can be expected to invite new market entry which will be able to drive the prices down. Recently, when certain circumstances were absent, the Commission was reluctant to pursue exploitative abuses and this is based also on the same reasons why Section 2 Sherman Act is absent from addressing exploitative abuses: it is sometimes too difficult to establish with precision when a price should be viewed as excessive. Moreover, there is the threat that firms, once they gain significant market power, will be subject to a regime of price control that would negatively affect successful companies to innovate and invest. Based on the above, Schweitzer concluded that, the U.S antitrust and the EU competition law perspective on exploitative abuses does not seem to be much different. There is a consensus that competition law should not intervene where the market can be expected to self-correct exploitative practices and that where high barriers to entry exist, price regulation may be needed. Schweitzer does not see an evidence of a fundamental gap between EU competition and U.S antitrust on this regard.

- ii. Predatory pricing in EU competition law and U.S antitrust law: predatory pricing is one of the areas in which EU competition law and U.S antitrust law do diverge. When talking about predatory pricing schemes, we talk about low pricing strategies – typically pricing below some measure of cost, in order to eliminate competitors or to deter entry by potential competitors. If the plan succeeds, the reduction of actual or potential competition will allow the predator to raise prices to an uncompetitive level in the longer run. In the U.S, the legal test to apply has been strongly influenced by the Chicago School scholarship which believed that, a predator must incur losses now in the mere hope that he will be able to recover them in the future. The prospect of actual recovery is, to their opinion, slim, since competitors can and will re-enter the market once the predatory pricing scheme is abandoned. Moreover, they believed that, predatory pricing schemes are too speculative to normally be a rational business

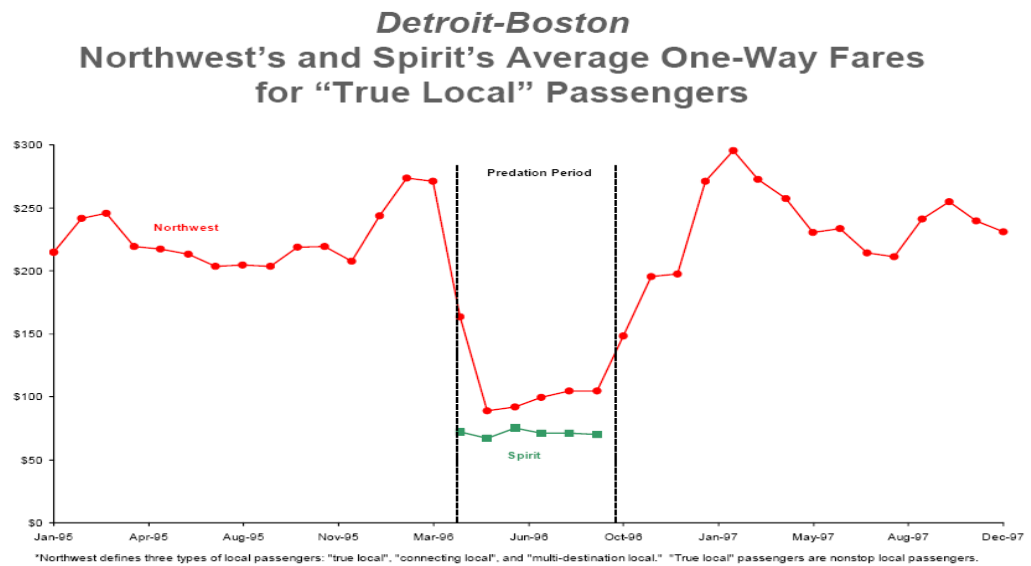
strategy, and therefore they will rarely occur. On the contrary, the U.S Supreme Court has introduced a new and narrow cost-based test which claims that a plaintiff now has to prove that: (i) the alleged predatory prices are below an appropriate measure of the defendant's costs, usually prices below the average variable costs; and (ii) an evidence that exists a probability that the defendant would eventually be able to raise prices above a competitive level to an extent sufficient to compensate for the amounts expended on the predation.

A good example of predatory prices in the U.S is the case of Spirit Airlines v. Northwest Airlines. Spirit Airlines is a regional airline carrying passengers to and from a small number of cities in the U.S. while Northwest is a major airline carrying millions of passengers each year all around the world. In 1996, Spirit and Northwest tangled in a price war on two domestic routes that each served: Detroit-Philadelphia, and Detroit-Boston. Fares have dropped to low levels that even passengers could not believe possible. Eventually, Spirit claimed that the prices were too low and eventually would lead Spirit to exit the market, and when that happened, Northwest would raise fares to monopoly levels and consumers would be harmed. However, Northwest claimed that those prices were a result of a head-to-head competition and that consumers were the main beneficiaries. In 2002, Spirit filed an antitrust suit against Northwest, alleging that Northwest's tactics were predatory and violated Section 2 of the Sherman Antitrust Act. Northwest challenged this claim by arguing that its price did not have an economic nor legal definition of predation.

Figure 1: Detroit – Philadelphia average fares for passenger



Figure 2: Detroit – Boston average fares for passenger



In the EU the approach is different. There are two situations that might occur: (i) an undertaking in a dominant position that sells at prices below average variable cost is abusive per se and predatory intent is presumed because "the only interest which the undertaking may have in applying such prices is that of eliminating competitors". Predatory pricing can be rational strategy for a dominant firm to eliminate competitors; (ii) prices above average variable cost, but below average total cost are abusive. The main difference between the U.S approach and the EU approach is that

the U.S law relies fully on proof of below cost pricing and market effect, or consumer harm, and dismisses the intent criterion. The U.S predatory test reflects the view that the protection of consumer welfare is the ultimate and the most important goal. The EU, on the opposite, does not require a proof of a market effect and the main criterion is the intent to eliminate a competitor. This approach reflects the understanding that competition is a process that results from the exercise of individual rights. Competitors, in their exercise of economic freedom, engage in a process on which they may lose and possibly perish. Competition law shall, however, ensure that the fate of each competitor will depend on skill and luck and not on the exclusionary exercise of unilateral market power by a dominant firm.

- iii. Refusal to deal: In order to find that a dominant company's refusal to deal constitutes an abuse, in Europe, a number of preconditions must be fulfilled: (i) access to the input must be indispensable to carrying on the rival's business (no potential substitutes and it is not economically viable to duplicate the facility for competitors of equal size); (ii) a duplication of the facility must be practically impossible; (iii) the refusal to deal must be likely to eliminate all competition; and (iv) the refusal to deal must be objectively justified. Both in the U.S and in Europe the common sense says that if dominant undertakings are required to share their facilities with competitors too light-handedly, they and their competitors would have no incentives to invest in developing new and better facilities. The main difference is that Europe has been somewhat more pro-actively pursued to open-access policies in innovative industries than the U.S.

In conclusion, the comparison between the history and the current application of Section 2 Sherman Act and Article 82 EC, revealed important commonalities and differences in the attitudes towards rules on market power. Heike Schweitzer argued that all of them are based on sound economics. German ordoliberalism, which was criticized wrongly for having

infected EU competition law with outdated economic theory, brought to Europe the conception of the competitive process as a process resulting from the exercise of individual economic liberties. While this is contrary to the Chicago School thoughts, such a concept is by no means irrational or incorrect in modern economic theory. Not like Dibadj, which argued that the U.S approach should converge to the European one, Schweitzer concluded that "as long as the reasons for divergence are clearly articulated and explained, there appear to be good reasons for them to persist".

2.2 The *Microsoft* and *Intel* cases

Ronald Coase wrote in 1972 that “If an economist finds something... that he does not understand, he looks for a monopoly explanation. And as in this field we are rather ignorant, the number of un-understandable practices tends to be rather large, and the reliance on monopoly explanations frequent”. Moreover, in order to better explain their position towards antitrust interventional approach in the last 50 years, Manne and Wright (2009), have cited Genesis performing the Duke’s Travels "And you will kill what you fear and you will fear what you don't understand". Today, there is a very important debate around the world on the optimal design of competition policy and enforcement in innovative industries, what is often described as the "New Economy" – characterized by innovation, multi-sided platforms, network effects, and novel business models or marketing techniques. Both in Europe and in the U.S, large firms in markets involving innovation, intellectual property, standard setting, or the possibility of network effects have been put on notice of potential antitrust actions. The antitrust community deals with the question of what is the appropriate role of antitrust, and monopolization law in particular, in the face of innovation? Some have said that the economy moves too fast for antitrust remedies to be fully effective. Others argued that antitrust rules should not be applied where innovation and dynamic competition are at stake because of the potential reduction in incentives to invest. Still others claimed that antitrust should be more enforceable in those special active markets.

Manne and Wright (2009) emphasize the importance of the error-cost framework in the antitrust law and economics because it paved the way for the incorporation of powerful tools of decision theory, or error-cost analysis, into the optimal design of antitrust rules. The error-cost framework is based on these two definitions: false positives (Type I error) and false negative (Type II error). Both types of errors are inevitable because it is a very hard task to distinguish between precompetitive conduct and anticompetitive behavior in the single-firm context, given limited evidence and economic theory. Antitrust lawyers, judges and

economists, have a long history of systematically assigning anticompetitive explanation to conduct that is novel and not well understood. This, in turns, can be explained by the fact that many judges are not generally trained in economic theory or that they have too many theories to choose from, but antitrust has not provided them with a sensible criteria to select the right one. Manne and Wright (2009) have nicely stated: "What is curious is that *new* is in fact *bad* in antitrust. Antitrust is hostile to innovation". As in Microsoft case, a significant amount of important antitrust cases can be characterized as interventions undertaken under uncertainty, in the face of novel business practice or product, relying on fundamentally flawed or misapplied economic analysis, subsequently demonstrated to have been mistaken. The Department of Justice and the European Commission have both held Microsoft under a cloud for 25 years on their innovative server operating system, two-sided platforms with network effect. As mentioned above, the essential issue of product innovation cases is interoperability or access to intellectual property, in the assumption that effective competition requires access to the monopolist's innovation. The main claim against Microsoft, both in the U.S and in Europe, was that they abuse their dominant position in the market for PC client Operating Systems for the purpose of monopolizing adjacent markets and, more importantly, to preserve their application barrier to entry on the tying market. The substantial number of developers writing applications to run on Windows system was an application barrier to entry. Although the cases originated from the same findings, of Microsoft's paramount position, the two cases were handled and ended differently in the two sides of the ocean. In the U.S the case was solved with the entry of a consent decree signed by Microsoft, the Department of Justice and the nine originally plaintiff states. The final order contained only behavioral/contractual remedies, aimed at ensuring that Microsoft could not discriminate between market players, and made available to all interested parties the interface information needed in order to effectively market products interoperable with the Windows platform.

On the other hand, the EU solution contained more than mere behavioral measures. Microsoft was forced to re-design its Windows operating system in order to eliminate the code-

commingling with the media player, thus removing this functionality from Window's source code. Moreover, they required Microsoft to open up interface information contained in its server operation system, which is a different product with respect to the client Windows operating system. Manne and Wright argued that in this case, the judges presume that Microsoft's products are unique and would not be able to be challenged even though time has shown that, Linux and Apple's operating systems were significant competitors to Microsoft. They concluded that, the tendency toward false positives stems from institutional factors that exist in antitrust law, courts, and the economics profession and that its time to change the attitude and use the best existing economic knowledge to design simple rules that minimize error costs.

An analysis of the *Intel* case reveals the emergence of the following picture: over the past years, government competition agencies and private plaintiffs have sued *Intel* challenging the legality of its relationships with Original Equipment computer Manufacturers (OEMs). *Intel* principally makes Central Processing Units (CPUs), which are integrated circuits that serve as the brain of a computer. In 1981, IBM selected Intel's 8086 processor, which embodied the x86 architecture, for use in its personal computer, and by that become the most popular processor in the world. Over the years, AMD became the second larger supplier of microprocessors based on the x86 architecture and a potential threat to *Intel*'s dominant position in CPUs. Many claimed that *Intel* responded to the increased competition from AMD by offering major OEMs financial and non-financial inducements in exchange for maintaining exclusive or near-exclusive relationships. *Intel* sells its CPUs primarily to OEMs such as Dell, HP and IMB and they in turn, compete among themselves to make computer sales to final consumers. Thus, according to DeGraba and Simpson (2010), *Intel*'s relationships with OEMs should be analyzed using exclusive dealing theories that account for such intense downstream competition: the incumbent offers some payment in exchange for exclusivity and sells the input at the monopoly price. The entrant could offer to sell its input to buyers at a much lower price. However each buyer realized that if it accepts the low price and entry occurs, then the

incumbent will lower its price to the other firms who remain exclusive. The resulting downstream competition will compete away the profits from low price. Therefore, each buyer will prefer to accept the incumbent's offer and obtain the fixed payment rather than to purchase from the entrant and earn no profit. Thus, the incumbent's pricing strategy enables it to maintain supracompetitive prices in the downstream input market while excluding the entrant. Consequently, consumers face higher prices for those goods and are deprived of the option of purchasing goods with the entrant's input. Within the board x86 CPU market, *Intel* had a very high market share. Between 2002 and 2006, for x86 microprocessors, *Intel's* unit share of CPU sales ranged between 79 and 86 percent and *Intel's* revenue share ranged between 84 and 89 percent. AMD, VIA and others have substantially lagged behind. Thus, in the beginning, entry by new firms did not threaten *Intel's* market power. As a threshold matter an entrant would need either to acquire an x86 license from *Intel* or to develop x86 emulation technology. Via was the only one granted with such a license, whereas Transmeta was the only firm that was able to commercialize an x86 emulation processor, but was managed to gain only a very small market share. Something has changed during 2003-2004, when AMD offered its Opteron CPU and HP offered a broad line of AMD-based x86 servers. As noted above, *Intel's* alleged use of exclusionary terms can best be understood by identifying five downstream computer markets: x86 servers, commercial desktops, commercial notebooks, consumer desktops, and consumer notebooks. Downstream competition theory, in *Intel* case, is best suited to markets of commercial computers. DeGraba and Simpson, give the main evidences, in their article, which can show anticompetitive harm:

- ❖ The market for commercial desktop computer between 2002 and 2003:
The commercial desktop market is largely defined by a customer's need for platform stability, which is the length of time that a computer with a particular component configuration is produced. Between 2000 and 2006, HP and Dell accounted for approximately 60 percent of worldwide enterprise desktop revenue. The second group of firms included IBM, Siemens, Fujitsu and more, which accounted for 25 percent.

Potentially, by assuming that HP and Dell had market power in the sale of commercial desktops, *Intel* could monopolize the sale of CPUs into this market by offering these OEMs consideration that was effectively lump-sum in exchange for an agreement that these OEMs would buy exclusively or near-exclusively from *Intel* at a supracompetitive price. If HP and Dell did not have market power, then *Intel* might still be able to monopolize the sale of CPUs into the market by entering into exclusive or near exclusive relationships with the second group of firms. In the article, the authors demonstrated some information indicating that *Intel* had an exclusive relationship with Dell. During the years 2002-2006, Dell used *Intel* CPUs in 100 percent of its computers and when Dell introduced AMD CPUs in its computers, *Intel* had drastically reduced its rebates to Dell. Also HP, until 2002, used *Intel* exclusively in its commercial desktops and in 2002 has considered introducing AMD-based commercial desktops. However, due to several factors, HP has changed its mind. Some say that HP did not want to jeopardize *Intel* support of the Itanium CPU, which HP relied upon for its high-end server computer and moreover, *Intel* agreed to provide HP with \$130 million in rebates over a period of a year. Thus, HP apparently was willing to enter into a near exclusive relationship with *Intel* in exchange for lump-sum consideration. From the above we can argue that *Intel* provided Dell and HP with consideration in exchange for purchasing their commercial desktop CPUs exclusively or near exclusively from *Intel* at supracompetitive prices. If this is true, *Intel's* exclusive relationships would have monopolized access to final customers leading to short-term anticompetitive harm in the form of higher prices and reduced variety for consumers and possible long-term anticompetitive harm by weakening AMD as a rival supplier.

- ❖ The x86 server market between 2003 and 2004: In April 2003, AMD has introduced its Opteron CPU, which was designed for use in servers. DeGraba and Simpson claimed that, this chip substantially outperformed *Intel's* Xeon and Itanium chips in

some important applications. Despite this, none of the big three server manufacturers made significant use of AMD Opteron chips in server computers until 2004, when HP introduced a line of AMD-based servers. IBM has purchased its x86 server CPUs exclusively from *Intel* until 2003, when it began making modest purchases of Opteron CPUs for its high performance computing server. However, IBM did not introduce any other type of AMD-based servers. Some argued that IBM executive expressed fear that *Intel* would withhold technical information from IBM if further purchases will occur. HP's decision however, to launch a broad line of AMD-based servers in 2004, surprised both *Intel* and other ORMs because of HP partnership with *Intel* in developing the Itanium CPU as a replacement for x86 CPUs. This, in turn, had substantially changed the competitive environment in the server market.

On 13 May 2009, the European Commission adopted a decision finding that *Intel* Corporation infringed Article 82 of the EC Treaty by abusing its dominant position on the x86 central processing unit (CPU) market. The decision imposed a fine of EUR 1.06 billion and obliged *Intel* to cease the identified illegal practices, to the extent that they are ongoing, and not to engage in the same or equivalent practices in the future.

2.3 The European Commission's 2008 Guidance paper on exclusionary abuses and the concept of anticompetitive foreclosure

On December 3rd 2008, the European Commission issued a Guidance paper setting its enforcement priorities in applying Article 82 to abusive exclusionary conduct. This document had been expected for a long period of time, especially after 2005 Discussion paper which paved the way towards a more economic approach to the application of Article 82 of the EU Treaty to exclusionary abuses. The paper seeks to simplify and explain the antitrust treatment of exclusionary abuses, such as exclusive dealing, refusals to supply, tying, single-product and bundled rebates and predation, by adopting a general concept of anti-competitive foreclosure, which contains elements of actual or likely foreclosure and consumer harm. The Guidance main goal is to serve as a key reference for market players, judges, competition authorities, practitioners and scholars. For this reason, it is very important that its content and the general approach will be expressed and interpreted in the clearer way. The paper provides, for the first time, comprehensive guidance to stakeholders, in particular to business community and competition law enforcers at national level, as to how the Commission uses an effects-based approach to establish its enforcement priorities under Article 82 in relation to exclusionary conduct. The Guidance paper contains indicators on the types of conduct that will be considered unlawful since they lead to anti-competitive foreclosure, and the conditions that will have to be fulfilled for such a conclusion to be drawn by the Commission, national courts and competition authorities. The leading framework was, and still is, based on the idea that the dominant firm will be able to have all the necessary information before it takes certain actions. In applying Article 82 to exclusionary conduct by dominant undertakings, the Commission focuses on those types of conduct that are most harmful to consumers and can jeopardize the well-functioning of the internal market. It is important to mention that consumers benefit from competition through lower prices, better quality and a wider choice of new or improved goods and services. Therefore, the European Commission is trying to direct

its enforcement to ensure that markets function properly and that consumers benefit from the efficiency and productivity which result from effective competition between undertakings. Although it's good intentions, the Guidance paper received some critics and recommendations from several bodies. In this section, I would like to call the main examples which were raised by the Center for European Policy Studies (CEPS) Task Force. The starting point is that in general, to their opinion, the Guidance is unclear or expressed too broadly in a number of respects and that if it stays the same and would not be changed, the Guidance might lead to findings of abuse in cases where the findings are not justified either on economic or legal grounds. Thus, the approach adopted by the Commission should be stated in a way that judges and competition authorities can apply it as easily as possible, and that diverging interpretations throughout the 27 Member States are kept at minimum. Below are the main concerns brought by the CEPS Task Force:

- ❖ The Guidance paper states, in paragraph 6, that the Commission will focus on anti-competitive foreclosure and that the Commission recognizes that "what really matters is protecting an effective competitive process and not simply protecting competitors". The problem is that the distinction between anti-competitive foreclosure and legitimate foreclosure is not clear enough. Moreover, identifying an exclusionary abuse requires a finding that the conduct led to, or is likely to lead to: (i) foreclosure of as efficient competitors (which have the same average avoidable cost as the dominant firm) and; (ii) impact on consumer welfare. Sometimes it seems that the Guidance does not give enough weight on the need to prove consumer harm as a precondition to any finding of abuse.
- ❖ In paragraph 10 of the Guidance paper, the Commission defined the notion of dominant position as "a position of economic strength enjoyed by an undertaking which enables it to prevent effective competition being maintained on the relevant market by giving it the power to behave to an appreciable extent independently of its

competitors, customers and ultimately of its consumers". The main difficulty with this definition is that the concept of dominance under Article 82 EC is that a firm is either dominant or it is not, whereas the underlying economic notion, market power, works on a sliding scale. A firm can have more or less market power and is able to gain more market power by product differentiation. The challenge is to find the correct and appropriate point in the sliding scale where a firm can be said to hold enough market power to warrant a finding of dominance and thus make the firm fall under the scope of Article 82 EC. The point should be set high enough in order to prevent over-intervention (Type I error) and should be treated as a "safe harbor" in the sense that only above the dominance threshold is the likelihood of anti-competitive foreclosure high enough to warrant a more in-depth inquiry into the conduct pursued by a firm. Up to now, the threshold is set at 40% which to the CEPS Task Force opinion, is too low and should be set to 50% market share because in theory, if half or more of the relevant market is in the hands of competitors, it is difficult to see how the dominant firm could hold such a significant market power as to be able to discipline competition without consequences for itself. Furthermore, the Commission should acknowledge that for certain types of abuse, an even higher level of market power might be needed.

- ❖ Paragraphs 16 and 17 respectively state that "an undertaking can be deterred from increasing prices if expansion or entry is likely, timely and sufficient" and "advantages specifically enjoyed by the dominant undertaking, such as economies of scale and scope, privileged access to essential inputs or natural resources, important technologies or an established distribution and sales network. They may also include costs and other impediments, for instance resulting from network effects, faced by customers in switching to a new supplier. The dominant undertaking's own conduct may also create barriers to entry, for example where it has made significant investments which entrants or competitors would have to match, or where it has

concluded long-term contracts with its customers that have appreciable foreclosing effects". The Commission should clarify that the factors listed above become relevant as barriers to entry or expansion, only when they lead, individually or in combination with other factors, to impeding the possibility of likely, timely and sufficient entry. Moreover, "...likely, timely and sufficient" must also be explained in more details.

- ❖ Paragraph 20 lists seven factors that the Commission considers relevant when assessing the likelihood that a specific conduct will have an anti-competitive effect: the position of the dominant undertaking, the conditions on the relevant market which may affect the impact of foreclosure, the competitive importance of foreclosed competitors, the competitive importance of the customers or input suppliers, the extent of the allegedly abusive conduct, evidence of actual foreclosure and direct evidence of any exclusionary strategy. However, the Guidance paper provides insufficient guidance as to how these factors will be considered and weighed in order to give the dominant firm the predictability to which it is entitled and whether the foreclosure is detrimental to consumer welfare.

- ❖ Paragraph 22 of the Guidance paper states that the Commission, under certain circumstances, is not obliged to carry out an assessment of the likely consumer harm: "There may be circumstances where it is not necessary for the Commission to carry out a detailed assessment before concluding that the conduct in question is likely to result in consumer harm. If it appears that the conduct can only raise obstacles to competition and that it creates no efficiencies, its anti-competitive effect may be inferred. This could be the case, for instance, if the dominant undertaking prevents its customers from testing the products of competitors or provides financial incentives to its customers on condition that they do not test such products, or pays a distributor or a customer to delay the introduction of a competitor's product". As it is possible to see, the paper supply only two examples and thus, the CEPS Task Force deeply

believes that, the cases where it is allowed to avoid a full assessment of anti-competitive foreclosure, should be defined more strictly.

- ❖ The Guidance paper states that it will normally intervene where the conduct is capable of hampering competition from competitors that are as efficient as the dominant firm. However, later on, in paragraph 24 it states that under certain circumstances, the Commission may depart from this principle and intervene even though the conduct would not foreclose an "as efficient competitor", especially in market characterize by network and learning effects. The CEPS Task Force is concerned by the fact that there is a risk that the possibility to departure from the "as efficient competitor" principle could make dominant firms more cautious and this may result in higher prices to consumers. Thus, they recommend defining the underlying circumstances in a better way.

- ❖ As the Commission moves towards a more effects-based approach to exclusionary abuses, it is reasonable to expect that the treatment of available economic evidence will play a greater role in the future. Thus, economic evidence may create a *prima facie* presumption that the conduct at hand was unlikely to lead to actual foreclosure or consumer harm. A good example was given by the CEPS Task Force regarding evidence for foreclosing condition: we know that foreclosure may have the effect of impeding the entry of potential competitors, thus, if during the relevant period of time new firms entered the relevant market on a sufficient scale to make their business viable, we may conclude that it is unlikely that the conduct was able to foreclose the market. Another example for evidence regarding consumer harm: if during the relevant period of time, consumers have been normally charged a lower price to purchase the same quantity of products, we can infer that the conduct of the dominant undertaking is unlikely to result in consumer harm. Nevertheless, it would be useful if

the Commission clarified whether and how available evidence will be taken into account in establishing a case for exclusionary conduct.

- ❖ The CEPS Task Force believes that there is a problem with the Commission's treatment of single-product conditional rebates. Given the hostility in European competition law to exclusive dealing on the part of dominant firms, there is a risk that some users of the Guidance paper may conclude that, because conditional rebates are analogous to exclusive dealing, then conditional rebates on the part of the dominant firm should receive the same harsh treatment as exclusive dealing by a dominant firm. Moreover, rebates may also be retroactive, meaning on all previous purchases made during the period, after the threshold is reached. The Commission proposed a multi-step procedure for determining whether a dominant firm's system of retroactive rebates has the potential to have anti-competitive foreclosing effects: first, one must estimate how much of the buyer's purchase requirements could actually be switched to a rival, which in turn depends on different buyers and rivals. Then, one must estimate the part of the demand that the buyer is likely to switch – the relevant range. Afterwards, one must estimate the price for the relevant range that the rival would have to offer to compensate the buyer for the loss of the rebate, if the buyer switched the quantity. The main problems with the relevant range approach are that the Commission does not explain how a dominant company could possibly calculate the relevant range with precision, and that the Commission's description does not take into account situations with more than one competitor or with more than one buyer.

- ❖ In the case of tying, the first step is to determine whether the tying and tied products should be regarded as distinct products or whether they should instead be treated as part of integrated system (single-product). In order to determine, the Commission developed the distinct product test which states that " Two products are distinct if, in the absence of tying or bundling, a substantial number of customers would purchase

or would have purchased the tying product without also buying the tied product from the same supplier, thereby allowing stand-alone production for both the tying and the tied product ". The CEPS Task Force recommended that the key question for the distinct product test should be whether, in the absence of tying or bundling, a substantial number of consumers would "mix and match" - will purchase the tying product from the dominant firm while purchasing the tied product from a different supplier. When there is reason to believe that a substantial number of consumers would "mix and match" in the absence of tying or bundling, the Commission will find distinct products. Corollary, if there is reason to believe that all but an insubstantial number of customers still would have purchased the tying and tied product from the same supplier even if there had been no tying or bundling, then the products involved should not be regarded as distinct products. In this case, the same market outcomes would have results even if the dominant firm had not engaged in tying or bundling, and hence there can be no causal link between the potential competition concerns and any tying or bundling and the case should not be analyzed as a bundling case. Furthermore, the Commission should clarify that one of the situations in which tying and bundling can have anti-competitive effects is when the tied product is currently a complement to the tying product, but has the potential to evolve into a substitute of the tying product.

- ❖ As we know, opportunity cost is at the heart of economics, thus when we analyze the cost of using resources in any particular activity, the correct measure of cost as a matter of economics is not accounting cost, it is the highest valued alternative use of those resources. CEPS Task Force argues that the section of the Guidance paper on predation would have been clearer if the paper had simply said that, in measuring costs, the Commission will not necessarily restrict itself to accounting costs but will also consider opportunity costs.

- ❖ To the CEPS Task Force opinion, the Commission should explicitly accept a number of defenses against allegations of exclusionary pricing where the firm is obliged to sell below its average total costs, including cases where the dominant firm acted for the purpose of meeting competition, engage in promotional expenditure and loss-leading, achieving economics of scale in network industries, start up big investments, or when the firm's conduct was justified by excess capacity during a recession period.

- ❖ Last but definitely not least, is the section which deals with refusal to contract. A duty to supply should arise only in exceptional situations where there is dominance in the downstream market or a likelihood of dominance if the refusal continues, and there should be also an evidence of actual foreclosure and actual or likely consumer harm. Moreover, the refusal should involve an asset or information which is indispensable for as efficient rivals in the downstream market to effectively compete with the dominant firm. If dominant firms enter into commercial agreements, once they supply someone they will risk being locked into the relationship for a long period of time. That may decrease their incentives to deal in the first place. Thus, the Commission should at least clarify under what conditions the dominant firm will be able to avoid continuation of previous supply. It is very important to underline that if competitors are only copying the dominant firm's product, or merely producing the same product more cheaply without adding new functionalities or new features, there is no justification for a duty to supply. In short, Article 82 should only protect competition by innovation, not competition by imitation.

In conclusion, the Commission needs to ensure that its view on Article 82 and the Guidance paper are consistent. It would be undesirable to have different rules for different kinds of abuse.

PART II

Features of IT markets:

Nowadays, Google's innovative search technologies connect million of people around the world with information every day. Therefore, we cannot continue our discussion on Google without first introducing the main characteristics of its market, the IT (Information Technology) market. The first part of this section will focus on network externalities, while the second part will define two-sided markets and give some important examples. The last part will conclude with the layered architectures of the Internet ecosystem.

3.1 Network externalities

As many complex goods, digital system goods are characterized by modularity. This modules account for different layers in a system architecture while each layer performs a different function, and the sum of these functions determines the overall utility and potential of the system good. The term "interoperability" means that layers can "talk" to each other. In reality, some layers of the system can be open to competition, while others are reserved to a single entity. Some layers of the digital architectures are normally characterized by strong direct network externalities which occur whenever a consumer's willingness to pay for one good increases along with the number of individuals that choose to use the good. As fax machines increase in popularity, for example, your fax machine becomes increasingly valuable since you will have greater use for it. Moreover, platform layers sometimes exhibit strong indirect network externalities and this happens when users attach a higher utility to a given platform as the number of applications that run on that platform increases, such as cases where complementary goods (e.g. toner cartridges) are more readily available or lower in price as the number of users of a good (printers) increases. When markets are characterized by strong network effects, market forces "tip" towards the emergence of a single product, which will come to dominant the market for at least one generation of the product.

3.2 Two-sided markets

As discussed above, when we consider network effects, we typically think of scenarios like adoption of the telephone or fax machine or a social networking like Facebook or LinkedIn, in which the benefit to each new user grows as a function of the number of existing users on the platform. Now, we will consider the network effect on two-sided markets which are roughly defined as markets in which one or several platforms enable interactions between end users, and try to get the two (or multiple) sides "on board" by appropriately charging each side. Meaning that platforms court each side while attempting to make, or at least not lose, money overall. There are many examples of two sided markets: Videogame platforms (such as Nintendo, Sega, Sony Play Station, Microsoft Xbox and etc.), need to attract gamers in order to convince game developers to design games to their platforms, and need games in order to induce gamers to buy and use their videogame console. Payment card systems need to attract both merchants and cardholders. And software producers court both users and application developers, client and server sides, or readers and writers. The insights obtained by the literature for two sided platforms apply more generally also to multi-sided ones; considering for example an organization attempting to convince a group of patent owners to join forces in order to establish a standard. The organization must obtain enough commitments from the patent owners in order to convince potential users to invest in the technology, while also making it attractive for each and every intellectual property owner to get on board. The theory of two sides markets is related to the theories of network externalities and of multi product pricing with the difference that the end-user does not internalize the welfare impact of his use of the platform on other end-users.

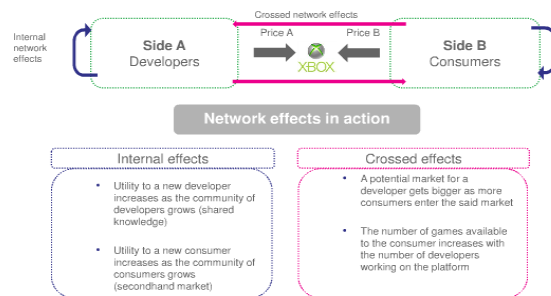
It is important to distinguish between usage and membership fees: The platforms' usage or variable charges impact the two sides' willingness to trade, and therefore their net surpluses from potential interactions; the platforms' membership or fixed charges determine the end users' presence on the platform. The platforms' structure of variable and fixed charges is

relevant only if the two sides do not negotiate away the corresponding usage and membership externalities.

Suppose that there are potential gains from trade in the interaction between two end-users, thus, we argue that a platform enables or facilitates the interaction between them. The interaction in question is an interaction through the platform (This does not mean that the two sided cannot interact through an alternative platform; cash instead of credit card for example). The interaction should be identified clearly. In the videogames case, the interaction occurs when a buyer (gamer) buys a game developed by the seller, and plays it using the console built by the platform. Similarly in the payment cards, an interaction occurs when a buyer (cardholder) uses his card to settle a transaction with the seller (merchant). For operating systems (OS), an interaction occurs when the buyer (user) buys an application built by the seller (developer) on the platform. The interaction between a viewer and an advertiser mediated by a newspaper or a TV channel occurs when the viewer reads the ad. The interaction between a caller and a receiver in the telecom network is a phone conversation and that between a website and a web user on the internet is a data transfer.

Rochet and Tirole make a key distinction between membership charges and usage charges, and between membership externalities and usage externalities. Gains from trade between end-users almost always arise from usage where usage decisions depend on how much the platform charges the usage. Usage externalities arise from usage decision: If I strictly benefit from using my credit card rather than cash, then the merchant exerts a positive usage externality by taking the card.

Figure 3: Example of network effect and two-sided market in the video market (source: slideshare)



Due to the fact that this thesis focuses on Google’s actions and features, we can say that search engines are a good example of two-sided markets and are among the most innovative services in the global economy. They provide extraordinary efficiencies for advertisers and consumers by targeting messages to viewers who are most likely to want to receive them. In order to attract more users, search engines use revenues from advertising to organize and index a great deal of content on the Internet.

3.3 Layered architectures

"The public policy approach to the Internet has become more and more complex as several markets – including fixed and mobile communications, media and content, IT – converge into one single Internet ecosystem". As in all kind of ecosystems, all the layers are interdependent and there is no possibility to deal with one layer without affecting all others. For many years, and even today, economists and policymakers are trying to find solutions to existing problems rising from market dynamics and constant evolution of networks and economic interactions in cyberspace. Some have believed in the "impossibility of public policy" and thus call for

laissez faire approach, while others believe in a world of "regulated freedom" where all the layers of the Internet are subject to strict rules with the main goal of forcing openness. In Europe, the European Commission and all national competition authorities are allowed to intervene in the regulated field to challenge anticompetitive conduct. The Commissioner for the Digital Agenda, Neelie Kroes, stated that we should try to find the balancing point between the Internet access providers and broadband providers which may be able to control and limit users' access to content, and the fear of taking unnecessary measures which may hinder new efficient business models from emerging. She used a road traffic analogy to explain that "creating new rules and crowding the street with signs does not automatically help the traffic to flow".

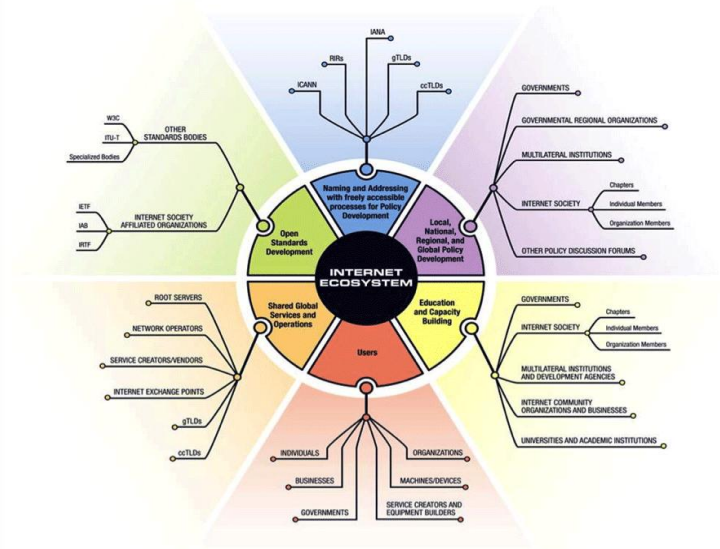
Figure 3: Road signs and traffic



The development of IT markets led to an increased commoditization of lower layers, which became standardized and interoperable, and shift the attention to market players on higher layers. Today, we can say that, the Internet is evolving in a way which generate market power at higher layers, including logical application and even the content level, not only in the infrastructure layer. Whether the asset controlled by the gatekeeper is tangible or intangible the layered architecture of cyberspace is such that discrimination and exceptions to the basic

Internet freedoms may emerge at all layers. Our main goal today is to adopt a policy approach that may prove suitable to help the Internet remain as open, rich, competitive, dynamic and inclusive as possible. The term ecosystem refers to the combined physical and biological component of the environment but when we apply it to the Internet, it refers to all the hardware and software that composes the Internet, the various players, the set of rules and the relation between them. This means that the Internet ecosystem includes both the physical architecture and cyberspace.

Figure 4: An image of the Internet ecosystem proposed by the Internet Society (ISOC) non-profit organization



One of the most important features of the Internet ecosystem is its layered architecture and the transition toward a layered environment, which is also known as the transition from the "spaghetti" to the "lasagna" model of the value chain. The particular architecture of modern broadband platforms is similar to the architecture of personal computers: hardware, operating system, applications and content, and the ability and effort of the end user to become familiar with the system, are essential to enable a quality end user experience. An important feature of the PC and Internet ecosystem is that most companies that succeed in creating an IP-based

platform also generate significant positive externalities in neighboring markets. This is also the case with companies which are involved with Microsoft, Apple and Google and count on indirect network externalities to generate enough consumer demand, and thus open new markets to downstream players that can develop compatible applications. The layers, in turn, create procedural problems for regulators and competition authorities on how to define the relevant market and how to assess the market power. The assessment of market power has become complex due to horizontal and vertical competition coming from players that operate in the same relevant market and from players that propose themselves as platform operators, even if they come from different relevant markets. Renda (2010) states that the main challenge which the competition authorities should deal with is how to create a level playing field, enabling technological neutrality and entry of new players in different but competing markets. The convergence between previously separated markets has created a common arena where players of the most disparate origin end up competing and those that manage to capture the end users' attention, will have a better chance to win the race. Thus, this implies that asymmetries in the regulatory treatment of players located at different layers on the ecosystem, may result in distortions of platform competition and should be avoided if not well justified. Due to the absent of legal certainty on what the law is, in 2009, Google and Verizon filed a joint legislative proposal on net neutrality to the Federal Communication Commission (FCC). The main pillars of the proposal were: (i) preserving the freedom of end users to choose what content, application, or devices they want; and (ii) the need to encourage both investment and innovation to the underlying broadband infrastructure. This can be done for example by: protecting users' right, discrimination against any lawful Internet content, application, or service would be prohibited, end users must be informed of reasonable traffic management, and not subjecting wireless broadband to these rules. Renda concludes that, the proposal is unlikely to put an end to the debate, especially for what concerns the wireless broadband and the interpretation of the types of practices that will be considered as "reasonable" traffic management.

We cannot talk about cyberspace without mentioning clouds and clouds computing, specifically clouds of applications. For example, let's take Apple, which has managed to develop an application store, called App store, based on its devices such as iPod touch, iPhone and iPad. By that, Apple is able to decide who can belong to the cloud, and who cannot. Similarly, Google recently acquired DocVerse and is making its Google Chrome a cloud-based browser. Many scholars argue that this in turn will create stronger forms of discrimination and thus a call for neutrality and regulations. Accordingly, creating a neutral and efficient policy is essential for all the layers of the Internet ecosystem, including the emerging cloud computing architecture. In conclusion, Renda states that, any policy framework that will be chosen in order to ensure competition should be:

- ❖ Efficient – remedies must be justified in terms of net benefits to consumers and the society as a whole.
- ❖ Proportionate – remedies must be in proportion to the goals and avoid unnecessary constraints or costs on the Internet ecosystem.
- ❖ Coordinated – cooperation between public and private players should become the norm.
- ❖ Layered - the effect of the policy must be shown with respect to all the players that operate in the various layers on the Internet ecosystem.
- ❖ Coherent – the level playing field between platform operators competing across the value chain should be regulated and treated the same.

PART III

4.1 Google's story

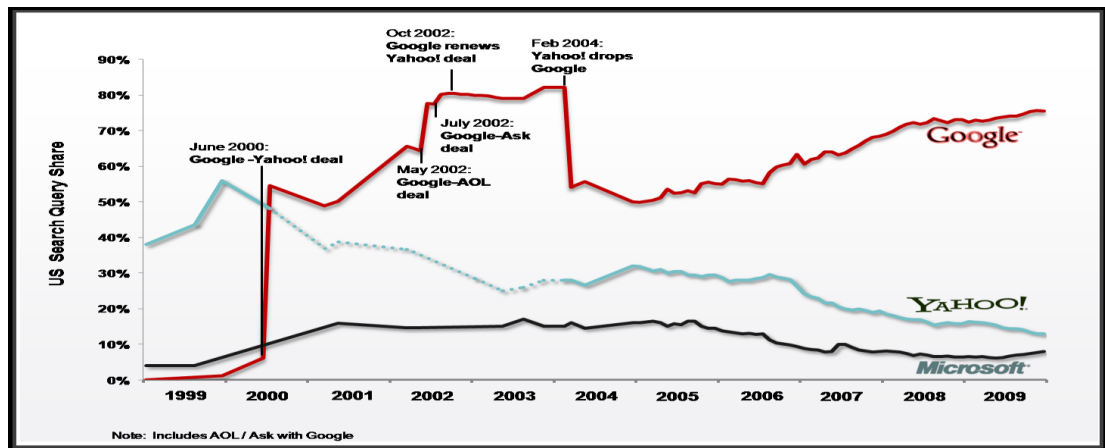
According to the 2010 European Digital Competitiveness Report of the European Commission, on any given day, more than half of all Europeans use the Internet. More than 90% of them actively search and look for information about goods and services on the web. In addition, an increasing percentage go online to read news, play music, games or movies, listen to web radio, make travel and hotel reservations, look for job, download software or upload their own writings, music or video. It is possible to see that commerce is moving online and thus online advertising is the fuel that drives the Internet. It provides website publishers with revenues to develop and promote content, products and services which its vast majority is offered free of charge to users. This gives Google the ability to determine unilaterally the direction and content of online commerce and thereby deprive consumers of the full benefits of an open and competitive digital economy.

The Internet consists of more than 100 million active websites and no directory of these websites is feasible. This means that search engines are the main tool for users to find what they are looking for on the web. They are essentially the gateway to all that the Internet has to offer. This makes the search advertising effective because it allows firm to present an advertisement to a user at the very moment when the user has indicated an interest in a product by entering a query in the search box. We can strictly say that search advertising has become the most important form of online advertising.

Google has entered into "intermediation" or "syndication" deals with web publishers to offer search services on their websites. Under these agreements, a user is able to reach a particular website and Google pays the publisher a percentage share of the revenue earned through search advertising. The intermediation deals are very valuable to Google because they enable the search engine to increase the volume of queries it handles, which is a prerequisite to

delivering highly relevant search results in an efficient manner (each query improves the algorithm on which the listing search result is built on). In 2000 Google became the exclusive search provider to Yahoo, which said to doubled Google's search traffic on the first day.

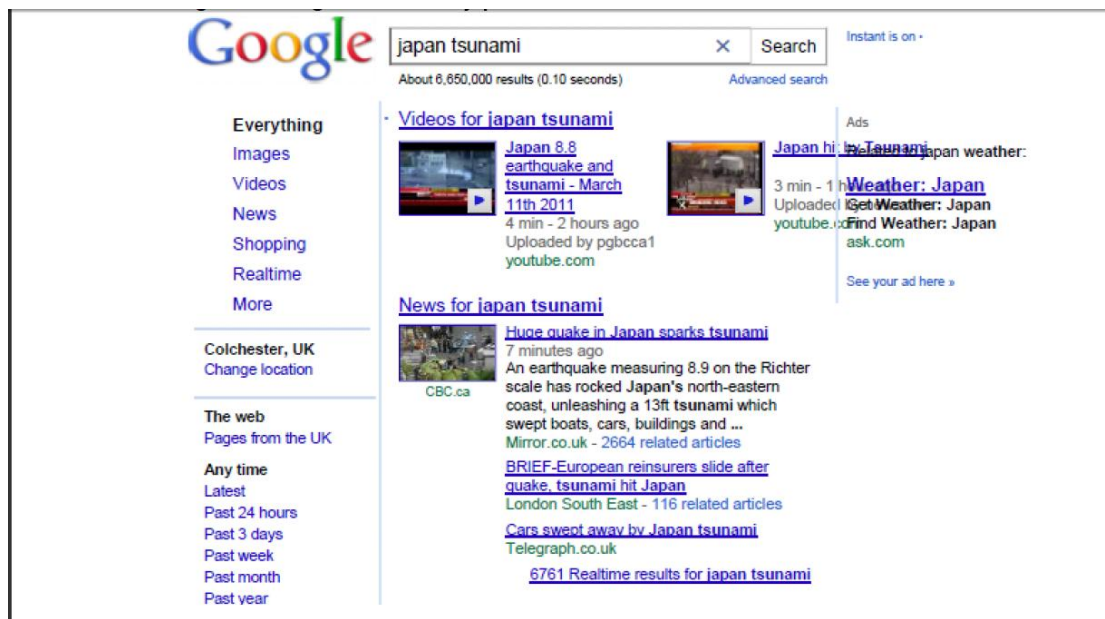
Figure 5: The influence of Google's intermediation deals on search query share with respect to Yahoo! And Microsoft



Moreover, by paying other firms to include Google toolbar or Google search box in their products or services, Google enables to gain scale which is essential. The European Commission once concluded that "scale is an important factor in order to compete effectively in search advertising". Scale enables a search engine to provide more relevant results and ads to users; the larger the volume of queries handled by the search engine, the better it learns which search results are most relevant to a given user query. Furthermore, the ability to return highly relevant results on tail queries (uncommon queries) is an important competitive differentiator because most queries are uncommon. To provide relevant results to the user, search engine must: (i) index websites on the Internet by crawling and gathering content located at various Internet websites and then indexing the content. When a search engine receives a query, it reviews the index, rather the entire web, to locate relevant results. Search engines use complex algorithms to match the query against their

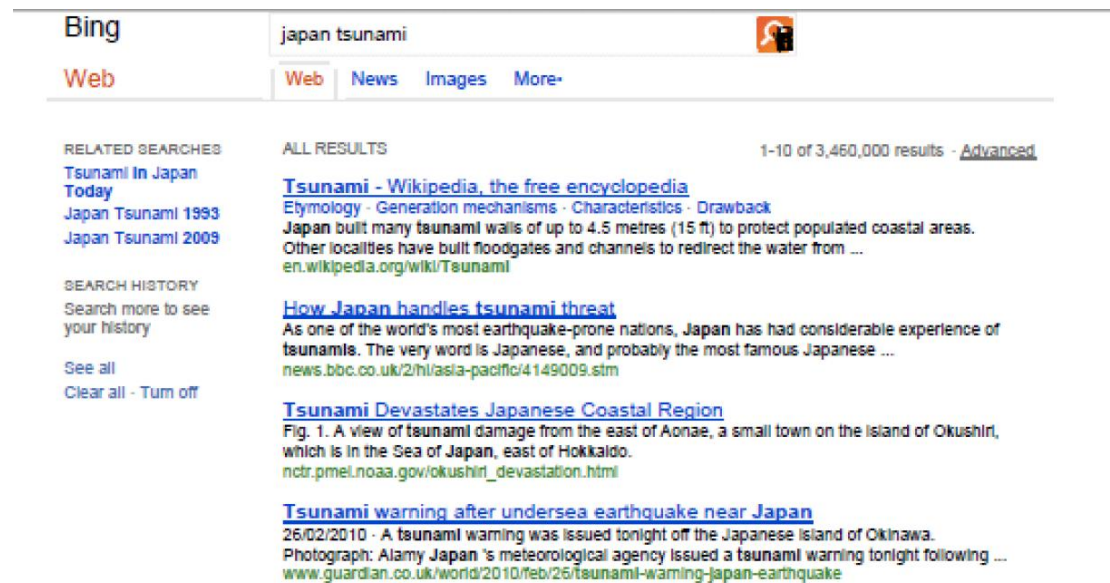
index, rank the results, and then display them to the user in real time and (ii) match indexed sites to user queries. Each time a user search and clicks on results, he gives a feedback to the search engine. The search engine "learns" that for particular queries, the user clicks on some results more frequently than others, which suggests that those results were more relevant. This "machine learning" improves the ranking results for all future users. Consider, for example, a user looking for information about a potential tsunami and assume that this user wants information about the tsunami that may be on the way, not general information about tsunami. The earthquake that hit Japan occurred on March 11, 2011. The figure below shows Google and Bing search results for "japan tsunami" that day.

Figure 6: Google search result page



As shown, Google returned at the top the search page highly relevant video results, linked from its YouTube site, as well as highly relevant video and news from several other sources.

Figure 7: Bing search result page

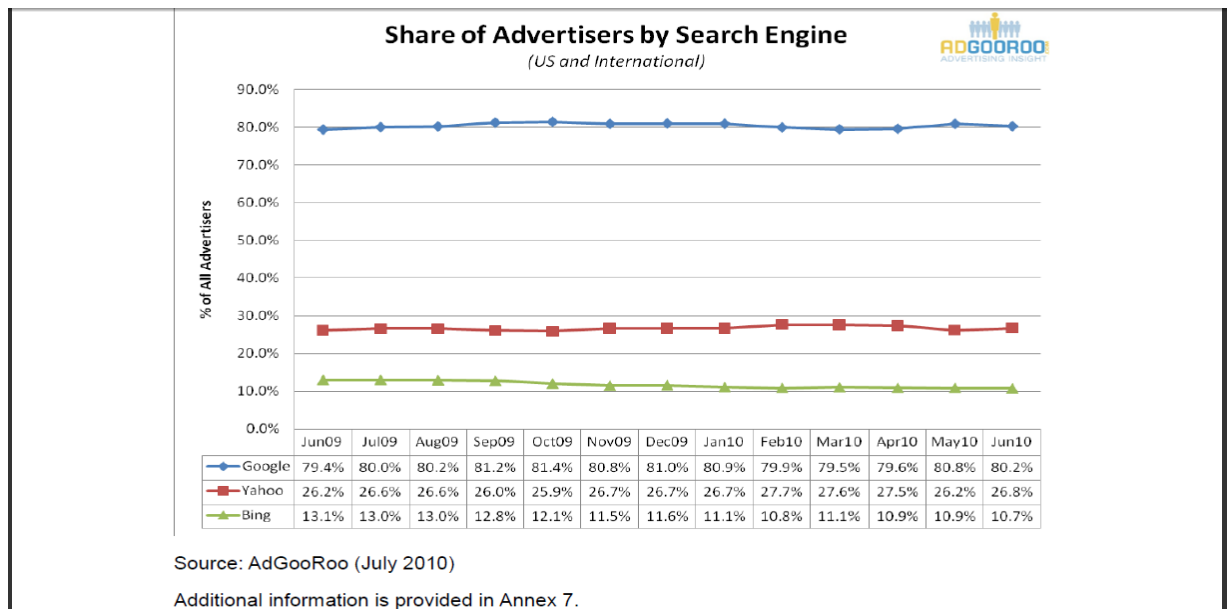


The Bing results are insufficient. The first three links are general articles about the topic. The fourth lead to news article about a tsunami warning issued in Japan a year earlier. Bing failed because it lacks scale and in order to compete viably, a search engine must attain sufficient scale in order to deliver relevant results for fresh queries. People have no reason to continue using search engine that provide them results with poor relevance (and as we know Google holds an overwhelmingly dominant position in the market). As the Commission concluded "Google enjoys a large competitive advantage compared to other search engines..." and "scale is one of the reasons why Microsoft is not able to compete effectively" in search.

Jonathan Rosenberg, Google's Vice President of Product Management and Marketing once said "Google is really based on this: Users go where the information is so people bring more information to us. Advertisers go where the users are, so we get more advertisers. We get more users because we have more advertisers because we can buy distribution on sites that understand that our search engine monetizes better. So more users more information, more information more users, more advertisers more users, more users more advertisers...". Firms want to advertise where they can reach large number of users, consequently, search engines

that have more queries will attract a greater number of advertisers. As the number of advertisers grows, so does the ability of a search engine to return highly relevant paid results that in turns makes the search engine more attractive to users and more likely that users will click on ads, which generate revenues. Scale also enables a search engine to attract more advertisers because more users attract more advertisers to bid on more keywords, making the engine better to match user queries to more relevant ads. The chart below shows that Google attracts close to 80% of the world's search advertisers, whereas Microsoft and Yahoo! attract only a small fraction of that.

Figure 8: Share of advertisers by search engine



4.2 Allegations: Google's anticompetitive conduct

Microsoft accuses Google of depriving its competitors of scale by; (i) requiring its intermediation and distribution partners to use Google exclusively, (ii) impeding advertisers from running advertising campaigns on other platforms, (iii) restricting rival search engines' access to key content such as videos (posted on YouTube) and books, (iv) manipulating search and search advertising results by artificially promoting its own offerings to the top spots in search results or even by removing entire sites from its search results. In short, in order to compete effectively, a search platform must gain scale in two respects, namely in the number of user queries it processes and the number of firms advertising on the platform. The need for scale in search presents a high barrier to entry and these acts are anticompetitive and in violations of Article 101 and Article 102 TFEU.

Figure 9: Should Google be considered as predatory?



Google's exclusive agreements with publishers and key distributors

- ❖ Google entered into agreements under which publishers must exclusively use Google's search and search advertising services on their websites. For example, Google has been the exclusive search provider for the most heavily trafficked websites such as AOL, Amazon.com, Fox Interactive Media, Ask.com, weather.com, CNN.com, AT&T and many more. AOL is an important European publisher which

its website attract more than 40 million visitors per month. In May 2002, Google secured an exclusive search intermediation agreement with them in the U.S and in 2004, after a long negotiation between AOL and Yahoo!, Google made a competing offer and expended its existing agreement for U.S search advertising to include AOL's European websites. Since 2004, Google has confirmed that it has an exclusive intermediation agreement with News Corp, Digital Media (formerly Fox Interactive Media).

eBay is one of the most highly trafficked websites on the Internet and generates a significant volume of queries. In 2006, Google concluded an exclusive agreement with them and in addition, required the distribution of Google's Toolbar to users of Skype, which was owned by eBay at that time.

- ❖ Google entered into distribution agreements under which software vendors, hardware manufacturers and service providers must exclusively provide Google search related products and services, such as the well known Google Toolbar and for web browser search default settings.

Figure 9: Screenshot of Google Toolbar



Searches made using the Google Toolbar, which are installed on the browsers from all the major vendors, are directed to the Google search engine. Moreover, Google has exclusive agreements with web browser vendors such as Mozilla Firefox, Opera and Safari. These deals provide that the search defaults in all of those browsers are set to Google's search engine. As a result, in the EU, 91% of all toolbar searches are made from a Google Toolbar. Adobe produces a range of high demand software products and provides many of them for free. Due to the existing agreement between Adobe and Google from 2006, users are automatically prompted to install the Google

Toolbar each time Adobe Reader, Adobe Flash Player or Adobe Shockwave is downloaded. Those products are installed on almost every PC around the world. In October 2005, Google signed a distribution agreement with Sun Microsystems in which Google Toolbar would be automatically downloaded and installed with each and every download of the free and popular Java software. Google has extended its exclusive distribution and intermediation strategy from desktop PCs to the mobile space and by doing that it has locked up the primary source of queries from mobile devices through an exclusive search default deal with Apple's iPhone which is, by far, the most common mobile device used to access the Internet. The same story works also for Android operating system. It is very important to mention the fact that until recently, when a Google Toolbar was installed, Google, without the user's knowledge, would also install another program called Google Toolbar Notifier which runs in the background of the PC and its goal is to block any attempt to change the search default to any engine different from Google. The main problem occurred when the user had chosen to disable manually the toolbar and Google continued running the Notifier in the background. The average user would not, or could not, fully disable the Notifier. After Google was criticized for the Notifier's persistence, it claimed that the problem was a mere bug and eventually fixed it.

Prohibiting effective ad platform interoperability

Google prohibits, by contract, interoperability between its dominant AdWords search advertising platform and other complex advertising platforms such as adCenter or Yahoo!. Google frustrates cross platform data portability and campaign optimization through two standard contracts: AdWords Terms & Conditions and AdWords Application Programming Interface (API) Terms & Conditions. At least one million advertisers have concluded such contracts with Google. Usually advertisers have a fixed and limited budget to spend on search

advertising and in order to manage their search advertising campaigns effectively (measuring the return on investment), advertisers must have information about how their campaigns perform. Because ad campaigns may involve many bid parameters, which need to be updated frequently, interoperability would reduce costs for advertisers to compare relative performance, making it more probable that they will use more than one platform. Due to Google's Terms and Conditions (T&Cs), existing software tools that enable advertisers to compare the relative performance of campaigns on different search advertising platforms, cannot be used. Instead, an advertiser who wishes to multi-home must:

- ❖ Maintain its AdWords data on one screen and its data for all other ad platforms on another screen;
- ❖ Manually compare the performance data for Google against data for other platforms by constantly toggling between screens; and
- ❖ Make changes to its Google campaign separately for, changes it makes to the other campaigns.

This process for manually comparing, reviewing, and updating campaigns may create substantial friction (in costs and time-consuming) that discourages advertisers from maintaining simultaneous campaigns on different ad platforms. It's simply may not be a viable option for efficient cross platform campaign optimization. Microsoft claims that by this anticompetitive conduct, Google wants to keep advertisers focused solely on Google's ad platform by making it difficult for advertisers to use its platform and any other platform.

Google restricts rivals' access to key content

In order to compete effectively with Google, any search engine must be able to return relevant results, from any public web content, and display it to users in a timely fashion otherwise, consumers will simply use Google. Google limits competitors, like Bing and Yahoo!, to access content by restricting their ability to crawl and index the web. It is relevant to explain

here the importance of the web crawler as a computer program that browses the World Wide Web in a methodical and automated manner. Mainly, they create a copy of all the visited pages for later processing by a search engine that will index the downloaded pages to facilitate searches. Because Google can crawl and index content without restrictions, it is able to serve more relevant and fresh results to its users, especially in response to the important tail queries discussed above. A new strategic initiative for 2011 is the Google's mobile platform, primarily Android, which provides Google with another means to monetize through search and advertising services. Then, by making Android the most attractive platform for accessing the Internet and by controlling its content, Google ensures its dominance and reduce the competitiveness of its rivals.

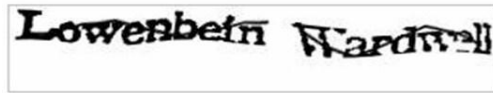
Nowadays, video and books are increasingly important in this regard. By acquiring the key source of video content, YouTube, and crafting a settlement of the Google Book Search, which provide Google with an exclusive access to millions of books, Google restricts its rivals' access and maintain its dominant position:

- ❖ YouTube was already a leading video content site on the Internet when it was acquired by Google in November 2006. Today, YouTube is one of the most important and popular websites and according to comScore, search queries made on YouTube constitute around 20% of all queries of any kind in the EU. This makes YouTube the second largest search engine after Google itself. Before YouTube was acquired by Google, its video content could have been crawled and indexed by any search engine. After the acquisition, Google imposed restrictions on search engine crawling and indexing of the YouTube site. Microsoft claims that by these restrictions, Google: (i) degrades the video search results on rival engines and reduces those rivals' overall competitiveness; (ii) raises rivals' costs by making indexing less efficient; (iii) hampers rivals in their efforts to acquire sufficient scale to compete effectively

against Google; and (iv) limits rivals ability to innovate in ways that improve the user experience.

Google imposes "Captcha" restrictions which are challenge-response tests that block machine access to Internet resources. They usually require manual reproduction of a sequence of characters displayed as a distorted graphic image that is difficult or impossible for a machine to read.

Figure 10: Screenshot of the type of graphic that the user sees and must manually insert in order to acquire access to the website resource



As Microsoft Bing serves crawl web content, they make access requests to web resources at a very high speed. According to Microsoft, it appears that Google monitor Bing server request rates by tracking the IP addresses of the individual servers that crawl YouTube's video content. When the crawler exceeds a certain request rate, YouTube sends a Captcha challenge that restricts the crawler for a period of time. This means that Microsoft can crawl YouTube content but not at the necessary speed to provide a comprehensive and fresh search index. Even with Google's restrictions, the fact is that more than half of Bing's video index comes from YouTube and this is what makes the delay far more significant for YouTube content than for any other site.

Google does not permit negotiated feeds which is a pre-arrange exchange of data and new information posted on websites. With a negotiated feeds, the publishing website automatically sends new information to third party that are interested in keeping data up to date. Negotiated feeds give a search engine a direct access to the site's content without the need to crawl, but Google reserves to itself the information about new

YouTube content and does not permit others to use the same type of negotiated feeds to display the new content information.

Sitemaps are useful directories, which in the absence of negotiated feeds, crawl and index web content. A sitemap indicates the structure of the website and enables web crawlers to operate as efficient as possible. Google, according to Microsoft, encourages publishers to maintain sitemaps, but does not provide, in turn, a sitemap for YouTube.

Mobile operating systems such as Android, iPhone, and Windows Phone 7 provide a platform for mobile applications. YouTube is a key application for mobile, just as it is for PC and in the United States, today, is the number one video site accessed by mobile devices. Microsoft claims that Google restricts mobile operating systems that compete with Android from accessing YouTube content. There are two ways mobile vendors might access and provide YouTube content in a mobile application: (i) through a public API which its use is governed by Google's terms and it only provides low-quality video streams for platforms like iPhone and Windows Phone that do not support flash, (ii) through a "private" API that provides high-quality media streams and which Google has reserved access to itself and favored partners. Microsoft began discussing the technical details of both APIs with Google in 2009 and in September 2010, Google informed Microsoft, that it would not make its private API available to them to create a rich YouTube application. Due to the fact that the YouTube application is listed at the top of all free applications, Microsoft made another request to Google in February 2011, but again Google refused access. Microsoft claims that users rightly expect to be able to access YouTube fully by means of any device that can access the Internet and that by restricting the rich YouTube application, Google is forcing a degraded YouTube experience on the Windows Phone 7 platform developed by Microsoft.

- ❖ Google began the "Google Books" project with the goal of creating an electronic catalogue of books which will offer basic bibliographic information and at most a few lines of the text. However, later on, Google has decided to display entire pages of book text. The main problem of Google was the fact that they did not own the books' content. Rather, they copied literally millions of pages of copyrighted books without permission and then tried to obtain a government approval for a plan that would give them monopoly over digitized copies of books whose copyright owners cannot be found. Google's approach was rejected by the U.S court on March 22, 2011, on antitrust grounds.
- ❖ In the mid nineties, a group on MIT computer scientists founded ITA, a start-up company, which is able to identify the best available airfares, in the most consistence, quickly and accurate way, without relying on high-cost and low-efficiency mainframe computers. ITA Software is a leading provider of innovative solutions for the travel industry. ITS's QPX, a comprehensive airfare shopping system, is used by leading airlines and travel distributors, including Orbitz, Kayak, and tripadvisor. On July 1, 2010, ITA Software announced a merger agreement to be acquired by Google and on April 2011, the U.S Department of Justice, approved the acquisition.

Figure 11: The new ITA's logo



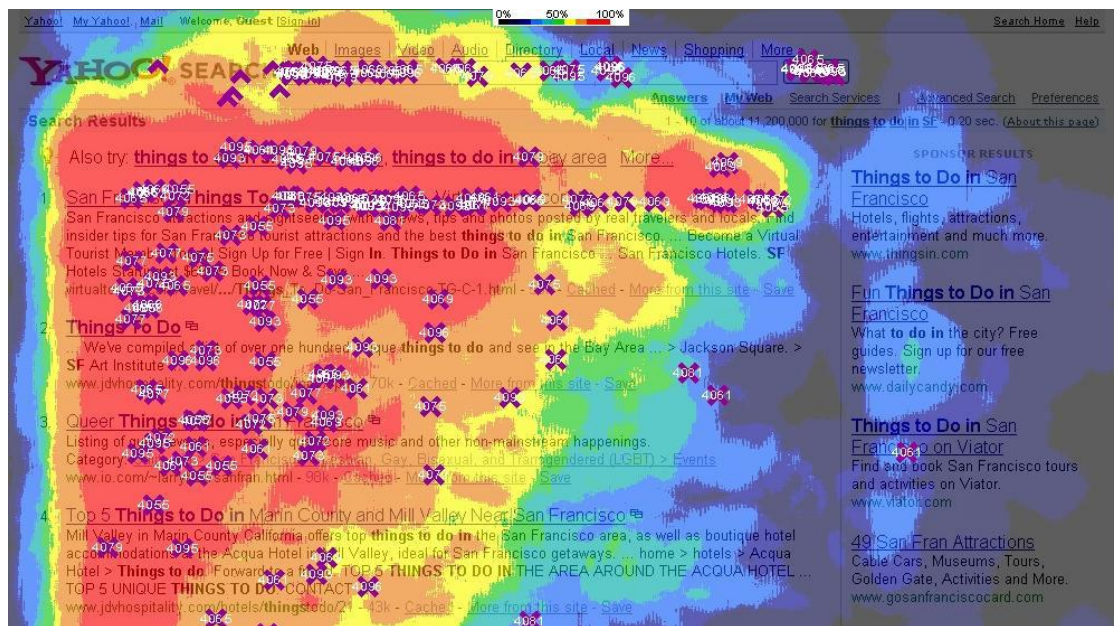
Microsoft, which its Bing search engine relies on ITA, claims that Google did not need to acquire ITA to gain access to ITA's technology, but by owning them they will have another opportunity to foreclose rival search providers from critical input.

Google manipulates search results to foreclose rivals by depriving them of scale and raising their costs

- ❖ Google's competitors argue that the manipulation of search results is another cornerstone of Google's exclusionary strategy hampering rivals to challenge its dominance. Google manipulate search results, is in the form of bias in the display of algorithmic search and search ad results, to foreclose rivals and eliminate competition from vertical sites. A "vertical site" is a web property that allows a user to access a website to search a data set within a particular category, such as finance, health, travel or shopping. Those vertical sites depend largely on Google for traffic and in order to obtain referrals, it is critically important that a link to its site appear on Google's search results pages. Research has shown that the first three positions on Google account for 79% of all clicks and the first five account for 88%. Google's PageRank algorithm induces a "rich-get-richer" phenomenon by creating a bias in favor of well-established web pages. The algorithm is largely based on webpage popularity, which makes already popular pages more discoverable by search engine. Google's rivals claim that Google's manipulation of search results artificially increases the number of clicks flowing to its own verticals and thus further entrenches its dominant in search and search advertising. It, on their opinion, also reduces the number of clicks that rival verticals attract and limits these rivals' ability to generate the advertising revenues on which their business depends.

The figure below highlights the areas of a search engine result page (SERP) where users focus their attention. The red field represents the area of the page that attracts most users' attention, the orange and yellow fields represent areas that receive to some extent less attention, while the green and blue areas are given the least attention. Microsoft claims that Google placed its own vertical sites on the "top left", the section that receives more attention.

Figure 12: "heat map" showing how users scan a SERP

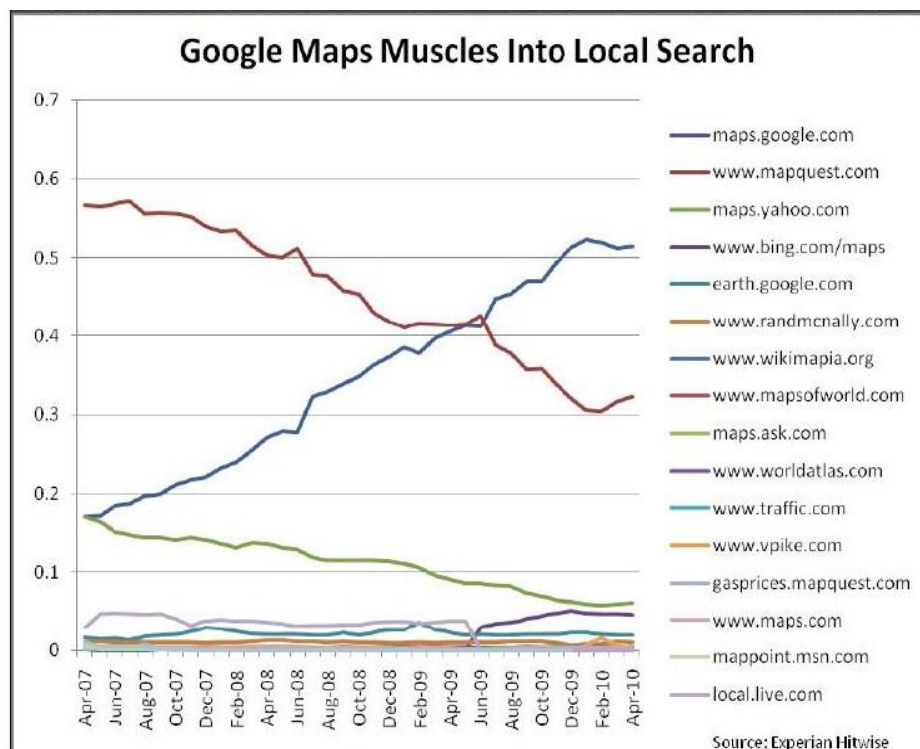


Non-Google search verticals, especially those not monetized by Google, may become a threat to the Google search and ad platforms: assuming that a user have found a relevant vertical site on Google, he may bypass Google and go directly to the competing vertical. Microsoft argues that the harm to competition, by Google's manipulation of search results, is substantial: Google's manipulation (i) directs users to Google properties that are less popular or relevant to users' queries than third-party sites; and (ii) is part of its anticompetitive campaign to deprive rivals of the same level playing field. In order to support their position in their complaint, Microsoft cited Marissa Mayer, Google's Vice President of Search Product and User Experience when she said that "... we used to have Yahoo! first and now Google is first... So we had the five top finance sites in their order of their popularity listed there. We roll out Google Finance, we did put the Google link first. It seems only fair, right? We do all the work for the search page and all these other things, so we do put it first...".

MapQuest is a very good example of Google's manipulation tactic used against its competitors. MapQuest was the most popular online mapping site. But Google, after

building a competing site in 2007, began to bias its results by inserting Google Maps as the top result. As shown below, MapQuest usage share immediately began to drop. It took only two years for Google Maps to surpass MapQuest in the number of visitors. The downward sloping red line in the figure below, illustrate the decline in weekly share of travel-map site visits for MapQuest. The upward sloping blue line shows the corresponding increase for Google Maps.

Figure 13: Weekly traffic share of mapping verticals (Aug.2007 – Apr.2010)

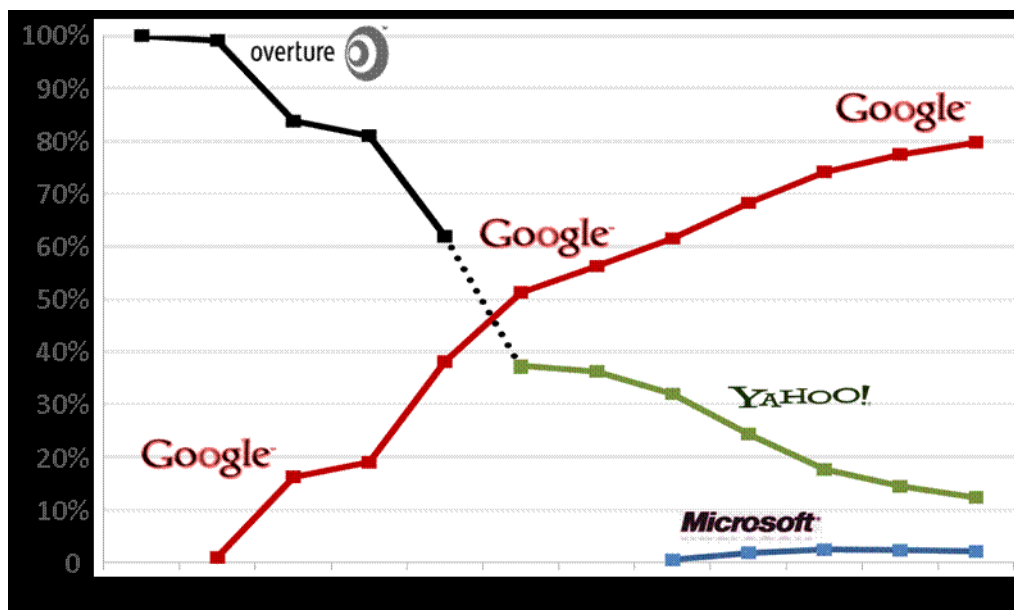


Google's manipulation of search results harms consumers, even apart from the harm flowing from less competition in the markets for search, search advertising and search intermediation. As the gatekeeper to the Internet, Google possesses large amount of historical and real-time data on users, advertisers and publishers, thus Google is in a unique position to monitor the competitive threat posed by competitors. Microsoft states that Google denies consumers a fair and unbiased choice among the most relevant search results. Furthermore, they claim that such manipulation betrays users' reasonable expectation that the SERP will rank the most relevant results based on an

objective algorithm. In many cases, to their opinion, consumers will be directed to lower-quality, less popular pages and pages that are less responsive to their queries.

Google becomes dominant in search advertising and search intermediation shortly after it achieved dominance in search: The first and original innovator in search advertising was Overture, which was based on a pay-per-click model. It was the first firm who developed an auction-based advertising platform which enabled advertisers to bid on keywords from queries entered into a search engine. In 2000, Google released its search advertising platform called AdWords, which sold advertising on a cost-per-impression basis (Ads were priced based on the number of times that users saw an ad, rather than the number of clicks on the ad). Due to the fact the Google AdWords was consider inferior to Overture's platform, in 2002, Google adopted Overture's pay-per-click pricing model to create a keyword-auction platform. According to Microsoft, Google required its search intermediation partners to use AdWords exclusively to monetize search results. Microsoft was left the only firm which offered both search and search advertising platform in competition with Google but its share of search advertising is less than 4% and significant lower in most EU Member States.

Figure 14: Google's adoption of Overture pricing model effect on the market



Google has achieved and maintained dominant positions in each of the relevant markets: search advertising, search intermediation and algorithmic search. The Court of Justice once described a dominant position as: "a position of economic strength enjoyed by an undertaking which enables it to prevent effective competition being maintained on the relevant market by giving it the power to behave to an appreciable extent independently of its competitors, customers and ultimately of its consumers". Google's market position is protected by high barriers to entry and expansion.

- ❖ Google's dominance in search advertising: Google's share in Europe remains comfortably above 95% and worldwide its share exceeds 70%. Microsoft argues that even if Google immediately ceased its anticompetitive conduct, the competition would face a dizzyingly steep climb to accumulate substantial scale. Google's competitors would have to overcome the massive scale advantage of Google's search and advertising platform. Moreover, Microsoft believes that the markets tipped in Google's favor long ago and have reached a point where it is difficult to see how, absent suitable remedies, effective competition can be restored.
- ❖ Google's dominance in search intermediation: Google's market share in search intermediation is even higher than in search advertising because Google is the intermediation partner of the most highly trafficked websites in Europe and serves a broad cross-section of leading European websites.
- ❖ Google's dominance in algorithmic search: Google is by far the leading search engine. Google claimed over the last years that competition is sufficient because users are always just "one click" away from rival search engine. Microsoft replies that absent scale, Bing and verticals are disadvantaged in their ability to return relevant results as Google does. While Bing may in theory be "one click" away, European users can hardly escape Google due to its exclusive intermediation and distribution agreements, which direct users to search with Google wherever they go on the Internet.

Over the years, Google has entered to a series of strategic acquisitions: in 2006, Google acquired YouTube for EUR 1.2 billion which become the number one online video site and online video search engine; in 2007, after paying EUR 2.2 billion, Google acquired DoubleClick and became the leading platform for display advertising; on November 2009, Google acquired AdMob which was the largest competitor in mobile in-application ads; and in July 2010, it acquired ITA Software that gave them the control over a key source of data and technology for the travel search, which, in turn, generates volume of customers and attracts advertiser spending.

In conclusion, on March 2011 Microsoft Corporation submitted a complaint against Google Inc. to the European Commission and the Commission has opened a formal investigation. The complaint is directed against anticompetitive practices applied by Google Inc. to entrench its dominance in the markets for online search and search advertising to the harm the European consumers, search advertisers, and web site publishers. According to Microsoft Corporation, over the decade Google has foreclosed access to key inputs and customers to decrease opportunities for its rivals to gain the scale they need to compete effectively with Google and offer viable alternatives to the consumers. They claim that Google, through the following four main illegal practices, has captured a market share exceeding 95% in Europe and has eliminated all possible competition. Google has: (i) imposed exclusive agreements on publishers and distributors that deprive competitors of the possibility to offer search and search advertising services; (ii) restricted interoperability between advertising platforms which lead to the limitation of advertisers' ability to use competitors' platforms and competitors' ability to compete for advertisers' spending; (iii) restricted competing search engines' access to online content that may be useful the European consumers; and (iv) manipulated search results to punish competitors or to promote Google's preferred properties to the top rankings on its search result pages.

In our world, nearly everyone who wants to be heard about political, societal, religious and cultural matters must work with Google. Almost every website publisher has to deal with Google in order to monetize effectively its web properties, every online advertiser must do business with them in order to reach customers and in the absence of efficient and effective competition in search, European consumers suffer from reduction in innovation, higher costs for products offered by the internet and a lower website quality. Google, which took the role of the main gatekeeper between users and websites, determines which sites will get significant user traffic and even how much advertisers will pay to reach consumers. In this complaint, Microsoft demands for effective remedial action to end those illegal practices and to restore and preserve competition. The European Commission will investigate whether Google unfairly lowered or demoted the search ranking of European websites that claim to compete with Google, thus harming their ability to generate traffic and ultimately survive. The commission will moreover investigate whether Google may have given its own services preferential placement in search results and, if so, whether this was an anticompetitive practice.

The European Commission stated on February 2010 that "Google is by far the platform that enjoys the highest market shares". In 2009, Google had market shares above 90% in most national markets, whereas Microsoft and Yahoo both had market shares below 5%. This means that for any enterprise, especially for SME, being represented on Google results means the difference between success and failure.

The practices challenged in this complaint meet all the anticompetitive foreclosure criteria listed in the Commission's Guidance on its enforcement priorities in applying Article 102 TFEU to abusive exclusionary conduct by dominant undertakings:

- ❖ Google is overwhelmingly dominant firm in each of the relevant markets. The Commission once said that "the stronger the dominant position, the higher the likelihood that conduct protecting that position leads to anti-competitive foreclosure".

Microsoft deeply believes that with such a strong position, it comes to no surprise that Google's foreclosure conduct has led to significant anticompetitive harm.

- ❖ Google's rivals are considerably weaker than the dominant firm. Bing/adCenter is Google's only rival in general search and search advertising and their shares are particularly weak in Europe due to Google's anticompetitive practices.
- ❖ Google has strategically targeted the most important routes by which a rival could build scale. Google has concluded exclusive distribution and intermediation agreements with companies that are particularly important for competitors to gain scale and credibility with other potential partners. Companies as AOL, eBay or Adobe are strategic channels to reach users and to build a track record as a reliable search and paid search advertising platform with other intermediation and distribution partners. To this regard, the Commission explained that "the dominant undertaking may apply the practice only to selected customers or input suppliers who may be of particular importance for the entry or expansion of competitors, thereby enhancing the likelihood of anti-competitive foreclosure".
- ❖ Google's anticompetitive conduct has harmed the entire online ecosystem and in particular to consumers. During the recent years, an increasing number of formal and informal complaints, against Google's practices, have been brought before the European competition authorities and courts. This includes complaints brought by Foundem, Ciao, the Federation of German Newspaper Publishers and the Italian Federation of Newspaper and Periodical Publishers. The unifying theme of these complaints is the same as the one brought by Microsoft: Google uses its dominant position to reserve itself, and deprive other of, user traffic and associated ad revenues. By depriving competitors from gaining scale, Google reduces their ability to innovate and to improve their search offerings.

Microsoft demands that Google's infringements must be terminated immediately, and that, effective, administrable and enforceable remedies must be ordered. Moreover, the remedy must also contain sufficient deterrents and safeguards to ensure that Google does not resume its illegal behavior. Through the whole claim, Microsoft insists that Google's anticompetitive practices harm the online ecosystem profoundly and have negative repercussions on key policy initiatives, such as the fostering of an open and transparent access to the Internet pursuant to the EU Digital Agenda.

4.3 Counter arguments to Google's conduct

Lately, Google's critics challenged Google's transparency with respect to its algorithm and ranking standards. David Balto, in his article "Internet Search Competition: Where is the Beef?" examines the validity of complaints made to the European Commission, and assesses the feasibility of some of the proposed remedies. Balto's main arguments were:

- ❖ "Modern Search Engines Were Not built in a Day" - early search engines were unsophisticated and the connection to the Internet was based on dialing-in with modems through the phone lines. As the volume of information available and the number of websites increased, search providers began developing new and better methods to connect the consumers to relevant information. From a technical standpoint, search providers engage in three main tasks: crawling the Internet, indexing what they find, and creating a program to deliver results from the index in response to queries. In order to crawl the Internet, search providers deploy computer programs called spiders or crawlers that scour the web and catalog the information in a series of indices and graphs. Early spiders returned only basic information about the websites they visited, but modern spiders "index the contents of the entire Web page, as well as many different file types such as Adobe Acrobat (PDF), Microsoft Office

documents, audio and video, and even site-specific metadata – structured information provided by site owners about the pages or information being crawled." To Baldo's opinion, indexing is the heart of the science behind search: understanding the user's intent and providing the information that best matches this intent. Finally, he explained, that an algorithm turns an index of results into a user interface that displays information relevant to the user's query. He mainly argues that, Bing, Yahoo!, Facebook, Google and any other search provider engage in the same exercise, but with different valuations of perfectly relevant results to a user's query. Balto says that "there are two important challenges that all search providers face: building it, and building it well." Companies such as Google enjoy success based largely on their ability to recognize and adapt to the new and robust forms of content that are available online.

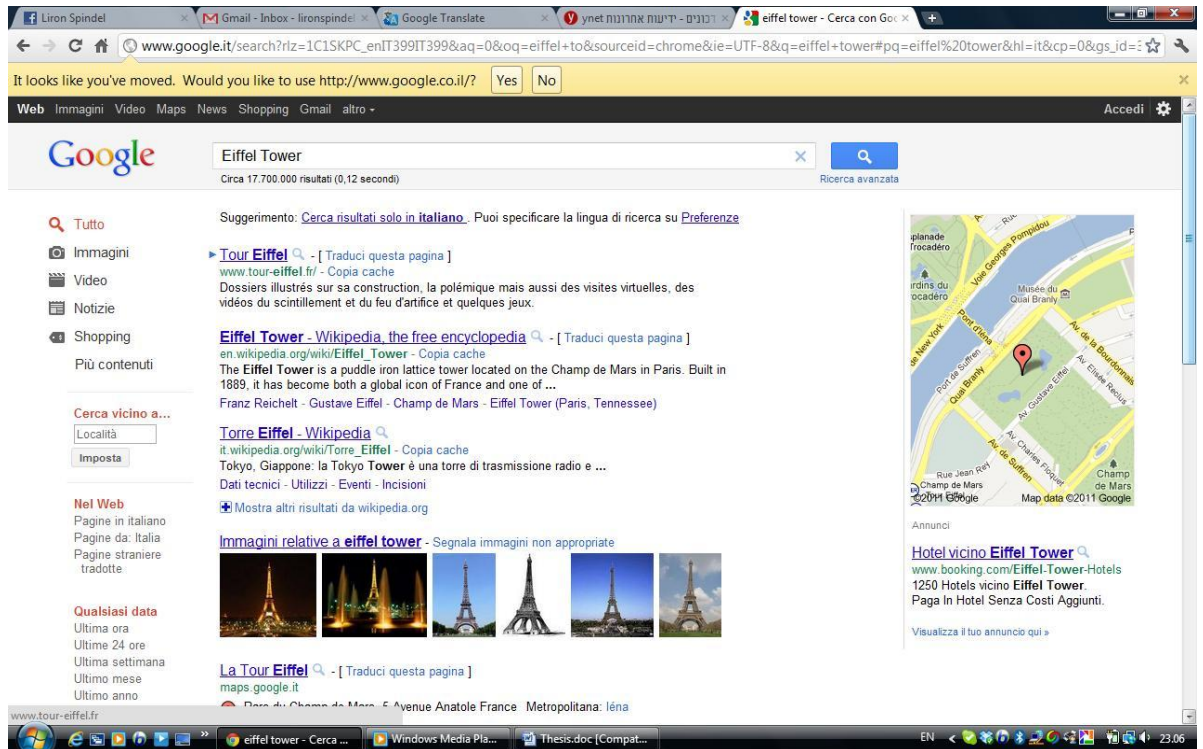
- ❖ "Search Engine Must Deliver High-Quality, Relevant Results to Survive" – To appreciate Google's contribution to business of Internet search, it is useful to remember Yahoo!'s model. Yahoo!'s format was more similar to a directory and even included search results that were paid for by websites. When Google was launched, it offered a new approach: results that were not paid for, and not in the directory format. At that period, in addition to Yahoo!, America Online, Alta Vista and others, failed to match Google's innovative approach. Google main goal was to provide the consumer with the most relevant information, as quickly as possible. Balto noticed that today, websites such as Facebook, Amazon, ebay, Expedia and Wikipedia all aggregate and organize information, steering users away from search providers such as Google, Bing and Yahoo!. Facebook, for example, is a serious threat to traditional search providers such as Google, Bing and Yahoo! because it not only takes traffic away from them, but it is also a growing source of redirected traffic for original content providers.

In order to deliver the most relevant results to consumers, all search engines must be

able to filter out spam and junk and to deliver high-quality, relevant results. Google's algorithm seeks to filter content ranging from deceptive or misleading websites that could install malware or endanger consumers to those that provide little to no useful content, resulting in a very poor user experience. In order to protect users from these sites, Google continually improves its algorithm. It is important to notice that even without spam, it is not always easy to deliver the most relevant information. Today, search providers are capable of precision that was almost a dream years ago. They can detect language, understand abbreviations, and make calculated assessments of the user's intent given his location, search profile, and current trends. Furthermore, search providers, in general, and Google, in particular, are able to account for human error, including common typos, misspellings, and inaccuracies. As search gets smarter, it is able to better manage information in an efficient manner. Danny Sullivan from Search Engine Land gave an excellent example of the achievements made by Google in the past decade. On 09/11, Google was not able to keep up with the demand for a constant flow of information about the terror attack on the World Trade Center and the Pentagon. The engine simply could not keep up with the combination of minute-by-minute changes and the quantity of people demanding information. But, on May 2011, when President Obama announced that Osama Bin Laden had been killed, Google was able to supply and display all the relevant information, demanded by users all over the world. This was enabled due to the creation of Google News which processes the information more quickly, identifies the most relevant search topics, and displays this information at the top search results. Google, in 2007, identified, that for some queries, the best results may actually be a combination of sources from a variety of media, such as links, images, and video and not a mere of list of links. Thus it developed the Universal Search which is able to display results from variety of different media formats in one convenient result. This allows Google to deliver various formats within the main, web results page. Balto

gave a very nice example about searching "Eiffel Tower" in Google: the results are images of the Eiffel Tower, news feed about the tower, and videos, rather than simply showing a list of websites.

Figure 15: A snapshot of Google's result page when searching "Eiffel Tower"



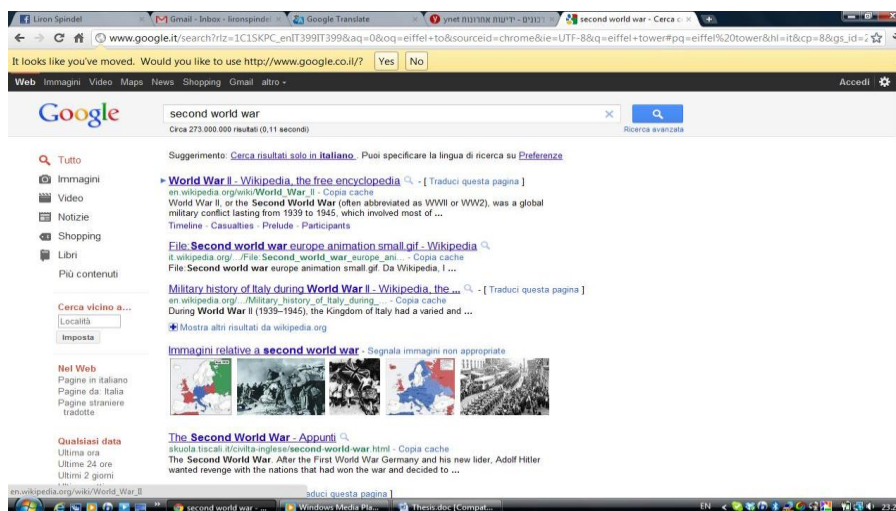
In short, successful innovation such as Universal Search incentivize search providers to continue developing new tools and methods for performing search.

- ❖ "It is Google's Right Build an Algorithm that Disfavors Lower –Quality Sites" – Balto claims that the complaint about the fact the Google's algorithm reduce competitors websites' ranking in its search results, is baseless. Most of these websites, to his opinion, contain duplicative content and are little more than a conduit between the user and the link he really wants to find. Google is clearly providing a more positive consumer experience when it delivers results that take the user directly to where it thinks the user may want to go, rather than sending the users to more sites.

Furthermore, Balto thinks that Google should be able to determine which search results deliver the best experience to users, even if it harms the businesses of Google's competitors. This is because consumers are the safeguards against bad conduct, and because Google's incentives are to provide the best possible user experience, otherwise, users will look and go elsewhere. Balto, nicely concludes, that it is possible that Google's method is not the best for indexing, ranking and displaying search results, and if it is not, someone will find a better method, and Google will find itself playing catch-up. This is, to his point of view, the competitive environment needed in the market.

- ❖ Another good example, given by Balto, is Google Knol which is Google's attempted response to Wikipedia. Like Wikipedia, Knol allows the general public to contribute knowledge in a collaborative manner. As we all know, Knol has not been wildly popular and it seems to appear in Google's search results rarely, if ever. Instead, queries regarding general topics often display Wikipedia solutions on top of the page and not Knol's. I have tried to check this argument and searched on Google the general topic "Second World War". The first three top places were Wikipedia solutions. Knol was not even in the first three pages (!) of the search display results.

Figure 16: Snapshot of Google search results display when searching "Second World War"



This is evidence of Google's commitment to relevance, and that Google is not willing to compromise search by substituting its own inferior product for the clearly superior independent product.

- ❖ "Search Engines Should Be transparent, But Not Too Transparent" – Google maintains Webmaster Central, where website operators can see how Google perceives their site, learn how to improve their chances at getting ranked, and ask questions that will be disseminated to all via Webmaster Central blog. Moreover, Google has begun notifying Webmasters when their sites are in violation of Google's policies in an effort to be more transparent. Google is far more transparent than most companies and it provides as much transparency as possible while protecting its business model, trade secrets, and the integrity of search.

In conclusion, because search is provided for free, consumer is mobile across different alternatives, and able to demand the highest level of performance from all competitors. While Google's method may be frustrating for those who are not at the top of search results, we must remember that Google is only one search provider that is implementing just one possible method of performing search.

4.4 Open fronts: book search, copyright, data protection and antitrust

We might say, to some extent, that the idea of the Google Books project is as old as Google. In 1996, when Sergey Brin and Larry Page, the Google co-founders, graduated computer science, they were working on a research project supported by the Stanford Digital Library Technologies Project. Their goal was to make digital libraries work and their big dream was that in the future, in a world with digitized books, people would use a web crawler to index the books' content and analyze the connection between them, determining any given book's relevance and usefulness by tracking the number and quality of citations from other books. In 2002, a small group of Googlers launched the first secret books project. They started talking to experts basically on the simple but crucial question: how long would it take to digitally scan every book in the world? And it turned out that no one knew the answer. Thus, on day, Larry Page has decided to experiment this on his own, and with the help of his product manager, they have measured the time it took them to turn the pages of a 300 page volume. It took them 40 minutes to reach the end of the book. In 2003, after countless rounds of experimentation, the team developed a scanning method that was much gentler than the current high speed processes. In 2004, a warm welcome tour in Oxford University has lead to a formal partnership to digitize the library's incomparable collection of more than one million 19th century public domain books. By the end of the year, Google announced the beginning of the Google Print Library Project with Harvard, the University of Michigan, the New York Public Library, Oxford and Stanford. Meanwhile, a series of exploratory talks with some of the world's biggest publishers, such as Blackwell, Cambridge University Press, McGraw-Hill, Pearson, Princeton University Press and many more, began to bear fruit. In 2005, Google renamed Google Print, Google Books.

Figure 17: Google Books Project



After scanning more than 15 millions volumes, authors and publishers launched a class action copyright infringement against Google claiming that Google had violated the plaintiffs' copyrights and those of other copyright rightsholders by scanning their books, creating an electronic database, and displaying short excerpts without the permission of the copyright holders. After more than 2 years of negotiations, in 2008, Google has announced an agreement to pay \$125 million dollars to settle the lawsuit. In 2009, the parties filed an Amended Settlement Agreement (ASA), seeking the courts' approval. The amended agreement provided in part that:

- ❖ Google would pay \$45 million to copyright owners whose books were digitized without permission.
- ❖ Google would also have to pay rightsholders 63% of all revenues received from commercial book uses.
- ❖ Google will be authorized to continue digitizing books or book sections but that right would not be exclusive.
- ❖ Rightsholders would have a rights clearance mechanism to limit Google previewed in search results.

- ❖ Rightsholders would retain the right to authorize others, including Google's competitors, to use their work.
- ❖ Google was required to hold payments due to an orphan work's rightsholder in the event he was ever found.
- ❖ Google would have to obtain authorization from rightsholders to display in-print books but Google could display out-of-print books without the prior authorization of the books' rightsholders, unless they ask Google to cease the display.

The Department of Justice, objected to the Amended Settlement Agreement on a variety of grounds, including antitrust, intellectual, property, and privacy. One of the main concerns was that Google will become "the only competitor in the digital marketplace with the rights to distribute and otherwise exploit a vast array of works in multiple formats." Judge Chin concluded that "... while the digitization of books and the creation of the universal digital library would benefit many, the ASA Amended Settlement Agreement ("ASA") would simply go too far... Indeed, the ASA would give Google a significant advantage over competitors, rewarding it for engaging in wholesale copying of copyrighted works without permission, while releasing claims well beyond those presented in the case." Among the main issues, was the one related to orphan works – works whose copyright holders are unknown or who cannot be found. Publishers, film makers, museums, libraries, universities, and private citizens must constantly manage liability when a copyright owner cannot be identified or located due to the high damages afforded by the copyright statute for any sort of infringement. In short, these works remain unused and unseen until they fall into the public domain about a century after their creation. Furthermore, the ASA wanted to adopt an "opt-out" framework for all works, including orphan books, and by doing so, finally orphan work will be accessible to the public in an unprecedented approach that would hold no entity liable for copyright infringement. Criticism was not late to come saying that because it is a copyright owner's exclusive right to determine who may use this work. Opting in by mere silence could not be deemed sufficient

as imagined by copyright law. In the end, the court struck down the ASA but mentioned that changing the procedure from an opt-out to opt-in may solve the problem. An opt-in framework has some disadvantages including limitation on the quantity of material available to catalog and on which capitalize. If the main goal was to create a worldwide digital library, then reducing the material to only those authors who opt-in to the project will represent a significant limitation to the project's value. The rejection of the Amended Settlement for the Google Book Project, to Durham and Rosenbaum opinion, is a call to a need for more cooperation between old laws and new media, due to the continues change in the digital world.

Part IV: Windows on the future

The wheel of technical revolution is rolling fast and every time it rolls, it lands on new technology. As we mentioned through all the research, Google is a unique company in the IT industry. Unlike many Web companies that have come before, and after, it, the search giant has been able to parlay its success online into a rich and powerful company that can compete successfully in several markets. It is a feat that only few companies have been able to achieve since the inception on the Internet, and it has definitely changed the dynamic of the industry. But like any high-tech company, Google's future is not certain.

Figure 18: Google's crystal ball – a glimpse into the future



In this section, I would like to point out some questions about Google's future:

- ❖ Google Chrome vs. Windows Internet Explorer – as we know, the main leader in the market of browsers is Microsoft, with its Windows Internet Explorer. History showed us that it is a difficult task to change user's habits and customs but it might be the case that Google will be able to attract consumer's attention and interest, and thus take Microsoft's position.

Figure 19: Google Chrome vs. Windows Internet Explorer



- ❖ Google vs. Apple - For years, Google and Apple were as close to allies as two competing companies could be. They shared a common enemy – Microsoft. But over the past year, that relationship has eroded as Google and Apple have taken a more contentious stance with each other. It has gotten so bad that Google CEO Eric Schmidt was ousted from Apple's board. Will Google eventually admit that it views Apple as an enemy?!

Figure 20: Google vs. Apple



- ❖ Google vs. Bing – Until now, there was a little debate that Google is the world's leading and capable search engine. But Microsoft's Bing search engine, which leverages its partnership with Yahoo, is slowly gaining market share due to the fact that it continuously improves its algorithm and strategy. It should be interesting to see if Google will be able to keep its innovative path and manage to stay the most relevant search engine, even after the lawsuits against its conduct.

Figure 21: Google vs. Bing



- ❖ Google vs. Mobile industry – A month ago, Google acquired Motorola Mobility Holdings Inc. in order to find new ways to supercharge its Android ecosystem. Motorola has been selling Android phones since the late 2009, so the Android platform is familiar for them. Google states that the goal of this acquisition is to enhance the Android platform as a whole in order to provide better user experience. Motorola will remain as an independent business, meaning that the Motorola brand is not going anywhere. Also, Android will remain open for other manufacturers. Now we can only wait in order to watch what will be the reaction of Apple and Microsoft.

Figure 22: Google's acquisition



- ❖ Google vs. Cloud computing - Although the company has ventured in several other areas, Google realizes that the greatest portion of its profits come from all its online endeavors. That is why they might want to make cloud dominance a key component in their strategy going forward. It will be a smart move. The industry is moving away from desktop-based software and increasingly moving to the cloud. If Google can be there with open arms, it can keep Microsoft, arguably its biggest competitor, out of the way.

Figure 23: Google's cloud computing and Microsoft's possible response



In conclusion, the examples above demonstrate that the IT industry changes around the clock and that there are many relevant markets where companies can compete in order to gain more market share, and where Google is not the dominant one. As Google acquired Motorola and try to expand itself in the mobile industry, other companies could and should do the same. Competition in the above market seems to exist and that there is no need for actual intervention from competition authorities on both sides of the Atlantic.

Before controlling for consumer harm in markets where dominant firm does exist, there is an urge need to decide whether Google, as any other firm in the industry, can sign exclusive agreements with publishers, which in turn can limit the ability of competitors to gain scale. Moreover, we should decide whether a company can limit competitor's access to its content. I believe that after a certain period of time, as done with patents, any company and any publisher should be free to sign contracts and to engage in any business activity with whoever it wants. This rule should be applied to all companies in all the relevant markets, not only to Google.

When discussing the uncovering of Google's search algorithm, we should take for example Coca-Cola, which keeps for years its secret regarding its formula. During the years Pepsi, its competitor, was able to gain significant scale and even became dominant in certain geographical areas around the world. The same way of reasoning should be applied in the Google's case: the only concern should be to consumers harm. As for the search engine

market, as long as consumers are getting the most relevant result, when entering a keyword and that Google's algorithm is not bias, any competitor could, and should potentially, compete with Google.

Thus,



Is
Google
God?

I strongly believe that Google is an example of only one way of searching through the Internet, and as it started in a market which was already developed and with a significant number of competitors, others should continue to innovate and invest their time and money in order to develop more up to date technologies. As it happened to Google, it can happen to anyone else. Competition authorities should be aware and ready to intervene where there are evidences of consumer harm and an intent and action to foreclose rivals (even though, in our reality, all companies including Google, Microsoft, Apple and more, are acting in the same way in order to become more dominant).

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