



**GOOGLE'S MONOPOLISATION OF MOBILE:
THE NEXT FRONTIER IN GOOGLE'S
CAMPAIGN TO CONTROL THE INTERNET**



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Executive Summary

Last year, over 550 million smartphones and tablets were shipped worldwide, exceeding shipments of desktop and laptop computers for the first time ever. Mobile commerce is also soaring, with European mobile ad spending expected to surge to nearly \$6.7 billion by 2016 and to \$23.6 billion globally. People are using mobile devices not just for calls, but to search, shop, navigate, listen to music, watch videos, and much more. The mobile sector holds tremendous potential for European consumers and vast new opportunities for European businesses. That potential, however, is at risk from a rapidly growing monopoly whose tentacles are reaching into every corner of the mobile Internet: Google.

Google already holds a tight monopoly grip on search and search advertising, with shares exceeding 90% in several European markets. Early on, Google recognised the threat mobile computing posed to it. Rather than compete on the merits, however, Google launched a coordinated effort to eliminate competition by obtaining control over forms of mobile advertising that threatened its monopoly power and by depriving competitors of opportunities to achieve the scale they needed to compete.

Google has largely succeeded in this quest. Google controls over 98% of mobile search in Europe and is rapidly expanding this dominance to other key mobile sectors. It also has succeeded in leveraging this dominance into mobile advertising. While competition regulators are rightly focused on investigating Google's anti-competitive conduct in search and search advertising, separate investigations and remedies will be necessary to address Google's distinct anti-competitive actions in mobile, including:

1. Subsidising money-losing ventures in order to control the mobile Internet

Android, Google's operating system for mobile devices, is key to Google's quest to monopolise the mobile Internet. Google views Android not as a product, but as a Trojan horse in its battle to dominate mobile by giving it the ability to constrain the development of products and services that could threaten Google's dominance. Google's anti-competitive tactics with Android include:

- **Losing money on Android to foreclose competition.** Google gives away Android for free, and even gives financial incentives to some operators that use Android, with the clear aim of thwarting competition to Google's search and search advertising monopolies. Google also imposes a range of constraints on Android that are not necessary for the proper functioning of Android but that dissuade licensees from using anyone other than Google for search and a variety of other services.
- **Reinforcing Android's dominance through strategic acquisitions.** Google has engaged in a series of strategic acquisitions to solidify its dominance in mobile advertising and kill off competitive threats. These include Google's acquisitions of AdMob, Zagat, Frommers, and Motorola Mobility.

2. Engaging in a pattern of deception to advance its monopolistic goals

Google has repeatedly misled mobile industry participants, regulators, and consumers in order to solidify its dominance in mobile:

- **False promises of Android's openness.** Google initially lured partners and consumers into using Android by promising it would be fully open and free. Since then, Google has tightened its grip on Android by blocking companies from using services that compete with Google's own services and threatening retaliation against licensees that sought to enter into deals with Google's competitors.
- **Stealing user data from WiFi networks.** Google deliberately engineered its StreetView cars to collect data on the location of private WiFi networks -- data which were of clear commercial benefit to Google's mobile businesses. After regulators discovered that Google was also secretly stealing the content of actual consumer communications from unencrypted WiFi networks, Google

engaged in a series of obstructionist tactics to prevent people from discovering the full scope of its actions.

- **Surreptitiously opting AdWords advertisers into mobile search.** Google furtively changed the default settings for its monopoly AdWords advertising platform so that advertisers were automatically opted into mobile search advertising. This artificially drove up prices for Google's mobile search ads because many more advertisers were bidding against each other for a finite number of ads. Many advertisers also ended up paying for mobile search ads they didn't want.

3. Using anti-competitive tactics to lock out competitors on mobile devices

As ICOMP has previously documented, Google has engaged in a variety of tactics to lock out competitors from key commercial opportunities in the mobile space. These include:

- **Using Android compatibility testing "as a club."** Google carved out certain features from Android that are highly valuable to smartphone users and segregated them from the "open" side of Android. Google then uses something it calls the "Android Compatibility Program" to block handset makers and mobile operators from using anything other than Google's proprietary offerings for these services. A Google Compatibility Program manager even admitted that Google uses its compatibility testing as a "club" to make phone makers "do what [Google] want[s]."
- **Threatening retaliation against operators and device manufacturers.** Google has reportedly threatened retaliation against companies offering Android devices who sought to offer competing mobile devices or to pre-install non-Google search or related services. These threats have no conceivable pro-competitive purpose or effect.
- **Entering into exclusive deals.** Google enters into many exclusive deals -- including deals on which it may lose money -- that have the effect of depriving competitors of opportunities to acquire the scale they need to compete effectively. These deals are anti-competitive because they hamper rivals' ability to attract users and tend to lock computer users into Google services.

Mobile represents the future of online advertising and commerce, and preserving a level playing field is absolutely vital to Europe's digital future. The power Google is amassing in the mobile sector will allow it to control what people see, monitor what they buy, and act as the universal toll booth for all commerce on the mobile web. Google's use of Android and various exclusionary tactics to dominate mobile search and advertising will stifle the investment and innovation that benefits consumers and the larger mobile ecosystem. Even as competition enforcers in Europe and elsewhere seek remedies for Google's anti-competitive conduct in search and search advertising, it is critical that they act swiftly and decisively in addressing Google's anti-competitive acts in mobile as well.

Introduction: The Mobile Internet

Look around when you're next in an airport, cafe, or meeting and you'll notice something remarkable: the mobile Internet is everywhere. People of all ages and across all walks of life now access the Internet -- for work, leisure, and shopping -- through what are essentially mobile computers: smartphones, tablets, e-readers and the like.

What's most amazing is not that the mobile Internet is growing, but the speed of that growth. Last year, over 550 million smartphones and tablets were shipped worldwide, exceeding shipments of desktop and laptop computers for the first time ever.¹ By next year, smartphone sales will surpass sales of all other mobile phones.² Mobile data traffic is also exploding, with estimates of an 1,800% increase between 2011 and 2016 -- three times the growth rate of other data traffic.³ That's because people are using mobile devices not just for calls, but to search, shop, navigate, listen to music, watch videos, conduct financial transactions, and much more, integrating these devices and their Internet connectivity into every aspect of their lives.

Because mobile devices are a prime channel for reaching busy consumers, mobile commerce and advertising are soaring. European mobile ad spending is expected to surge from \$775.5 million in 2011 to nearly \$6.7 billion by 2016, with global mobile ad spending reaching a whopping \$23.6 billion.⁴ Europe might in fact beat the U.S. in mobile ad spending due to the higher number of mobile handsets in the region.⁵

While each of these numbers is impressive on its own, putting them together reveals a deeper truth: mobile devices have become the centre of a new global computing phenomenon, one that links communication, content, entertainment, navigation, commerce, advertising, finance, and search. They also are at the centre of a new world of mobile commerce that is revolutionising how businesses reach their customers -- and the intermediaries they rely on to succeed.

The mobile sector holds tremendous promise for European consumers and vast new opportunities for European businesses. Unlocking this potential is key to achieving Europe's *Digital Agenda*: to use digital technologies to "spur innovation, economic growth and improvements in daily life" while "enabl[ing] Europe to address its key challenges and ... provide Europeans with a better quality of life."⁶

Today, however, the great potential of mobile computing is at risk. That risk is a rapidly growing monopoly whose tentacles are reaching into every corner of the mobile Internet: Google.

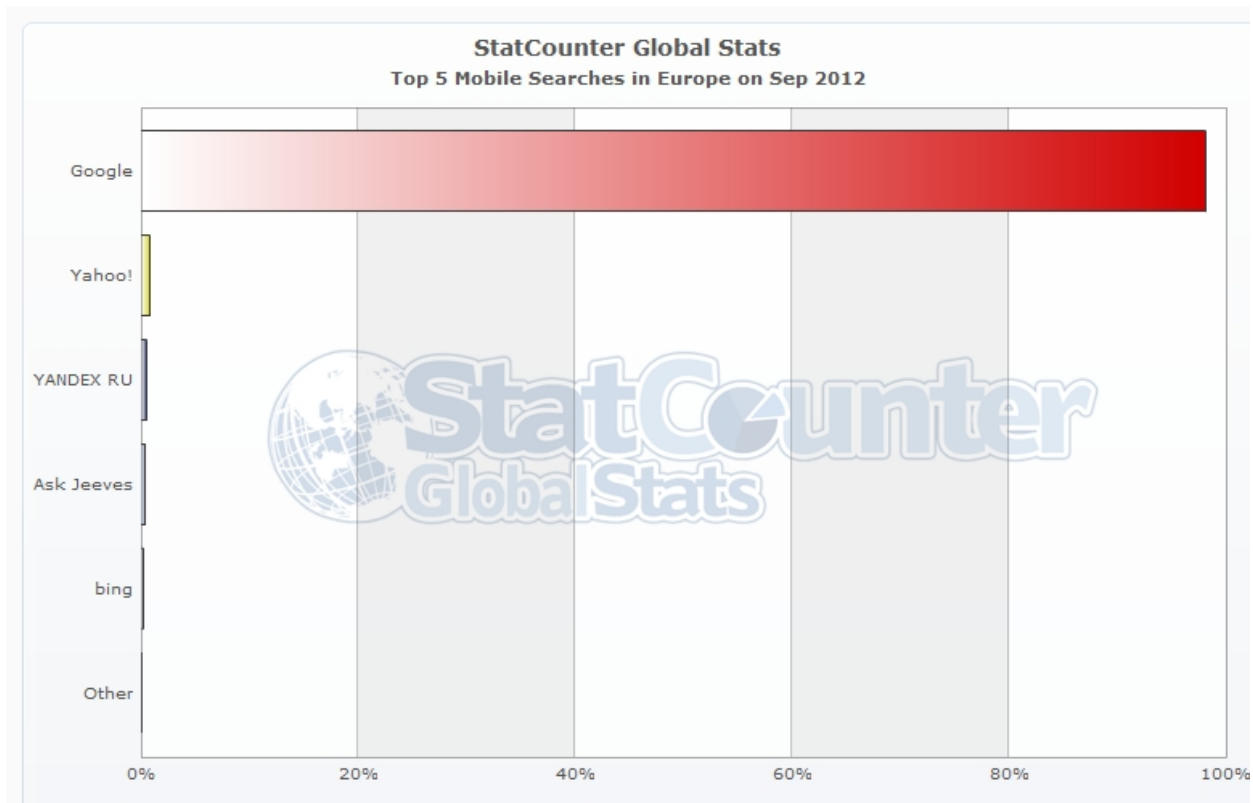
Google's Domination of Mobile

To understand Google's control over the mobile Internet, it is necessary to understand Google's control over search. Google today holds a tight monopoly grip on search, with market shares exceeding 90% in several European markets.⁷ For Google, however, search is merely a means to a much more lucrative end: selling ads. This is where Google truly dominates. Of Google's nearly \$38 billion in revenue last year, over 96% came from advertising.⁸ Analysts estimate that Google controls roughly 95% of search ad revenues in Europe. Not content with its search advertising monopoly, Google is rapidly working to extend its dominance to other forms of advertising, such as display and video.⁹

Early on, Google recognised the threat that mobile computing posed to its search and search advertising monopolies. That's because mobile computing offers unique opportunities that could draw advertisers away from using Google's PC-based search and advertising services. These include the ability to target ads to people on the move and at or near the point of purchase; the ability to target ads based on a user's location; the ability to cover the entire screen with an ad and thus command the user's attention; and that information and ads shown in mobile applications ("apps") can serve as effective substitutes for search results. As Google admitted in its 2008 Annual Report, "If [mobile] users . . . do not widely adopt versions of our web search . . . our business could be adversely affected."¹⁰ To counteract this threat, the company made mobile a top priority: As Eric Schmidt announced in 2010, "[e]verything that Google will create going forward will be done through a 'Mobile First' lens."¹¹

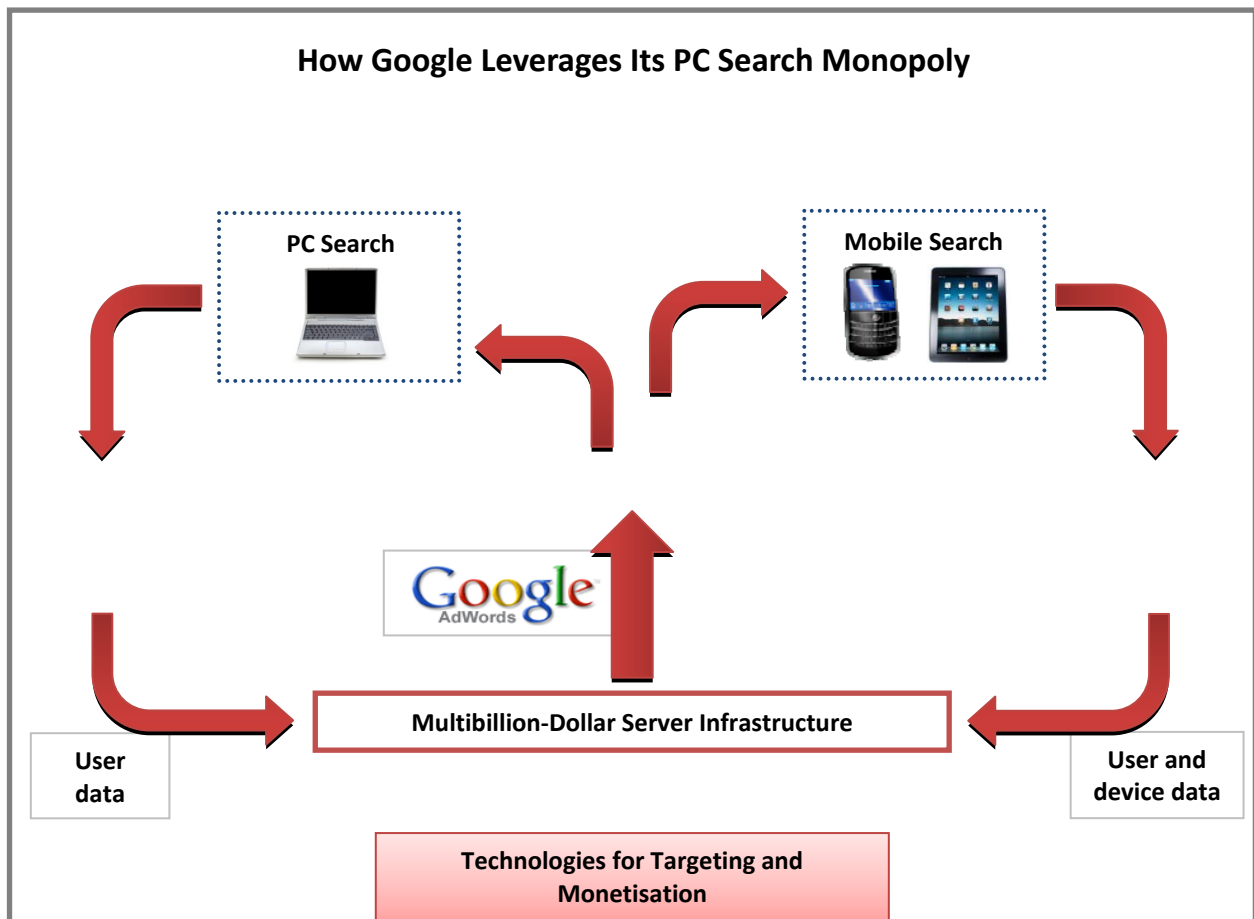
Rather than achieve this goal through competition on the merits, however, Google launched a coordinated effort to eliminate mobile competition to its search and advertising monopolies. Its goal was clear: to obtain control over those forms of mobile advertising that threatened its monopoly search and advertising businesses and deprive competitors of opportunities to achieve the scale they needed to compete. Its strategy was to leverage its existing monopoly power in PC-based search and advertising into the mobile ecosystem by applying many of the same anti-competitive tactics it used to achieve dominance in search and advertising onto the new platform of the mobile web.

Google has largely succeeded in its quest to dominate the mobile Internet and to weaken potential rivals. Google already controls over 98% of mobile search in Europe.¹²



Google is rapidly expanding this dominance to other key mobile sectors. Google claims to have over one billion monthly active users of Google Maps, a service that is particularly relevant for mobile.¹³ Google's YouTube service represents over 60% of video content streamed to mobile devices¹⁴ and is now the world's second-largest source of search queries (after Google itself), bigger even than Yahoo! or Bing.¹⁵ Smartphones running Google's Android mobile operating system represent more than half of all smartphone sales in many European markets.¹⁶

Most importantly, Google has succeeded in leveraging its dominance into mobile advertising profits. As Google CEO Larry Page revealed not long ago, Google is "seeing a huge positive revenue impact from mobile, which has grown 2.5x in the last 12 months to a run rate of over \$2.5 billion."¹⁷ A leading analyst recently adjusted upward its growth forecast for mobile advertising on the ground that "Google has translated its dominance of overall online and desktop search advertising into dominance of mobile search and mobile advertising at a rapid pace."¹⁸ Google has been able to generate such high profits in mobile advertising in large part because it can leverage the same massive infrastructure, user data, and advertiser network that powers its PC-based search monopoly into the mobile sector:



ICOMP's 2011 paper, *Google's Efforts to Monopolise Key Segments of the Mobile Ecosystem*, provided an introduction to these issues. This paper builds on that analysis by examining other conduct through which Google is depriving rivals of opportunities to compete and extending its monopoly power into every corner of the Internet. As one observer recently noted,

"Google appears to have its sights set on controlling a user's total Internet experience, from mobile devices, browsers and applications to Internet and cable TV service[s]. Basically, Google would love for Internet users to see its brand at every turn on the Internet and every time a wallet is opened to purchase a product or service."¹⁹

The mobile Internet is simply too important to Europe's citizens and economy to fall prey to the ambitions of a private monopoly. Google's quest to dominate online advertising places its interests in direct conflict with those of its users (consumers) and customers (including advertisers and web publishers); these and related conflicts of interest permeate its efforts to dominate mobile as well. ICOMP hopes this paper will inform consumers and other stakeholders of the important issues at stake and assist competition enforcers in conducting detailed investigations of Google's abusive practices in mobile.

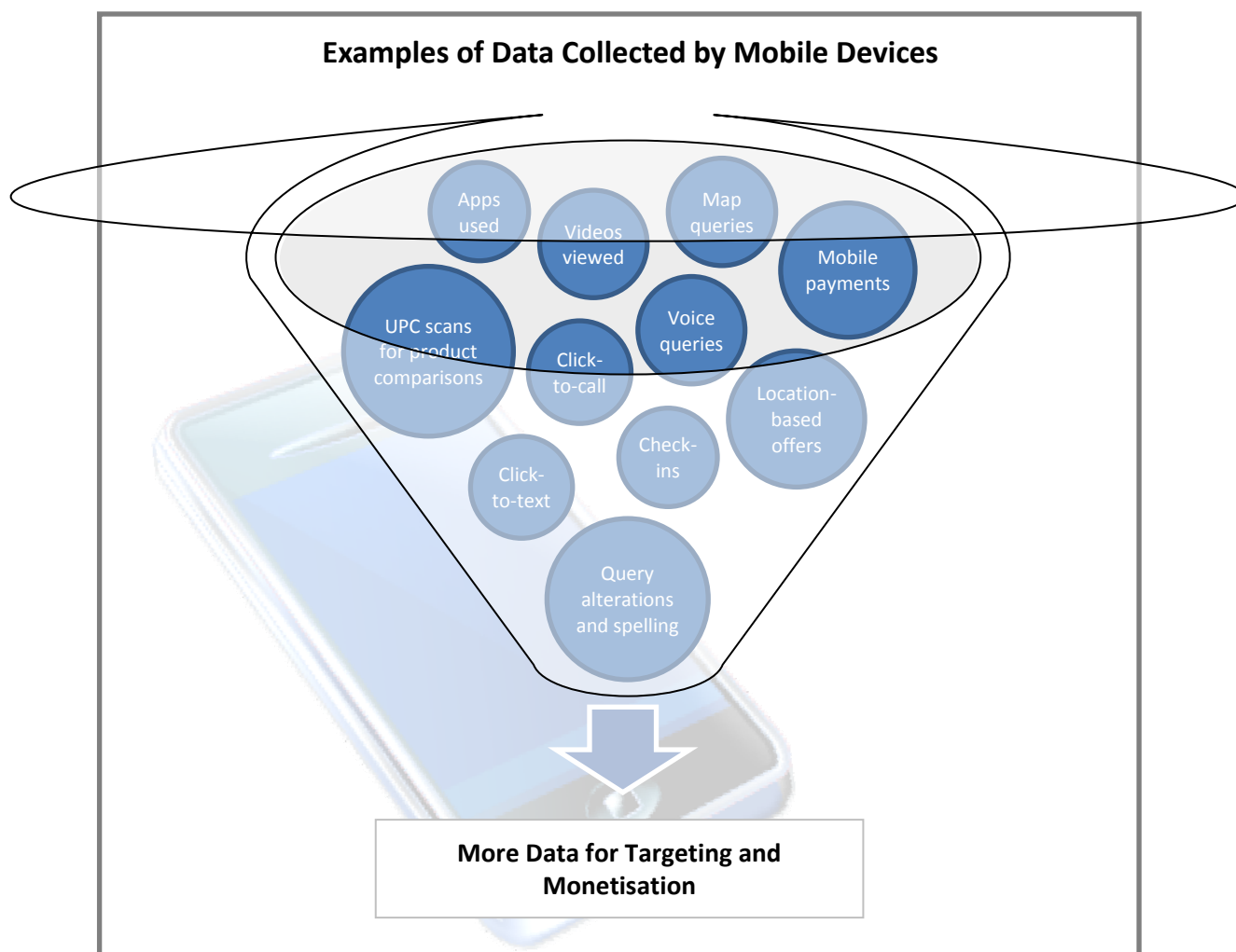
The Sources of Google's Monopoly Power

A key component in Google's strategy to acquire and maintain monopoly power is to prevent others from gaining the scale they need to compete effectively. Search engines can improve their results more effectively as their scale -- volume of search queries, number of advertisers, and volume of user data -- increases. Having more users, advertisers and data allows search engines to learn more quickly, run more efficiently, and generate the higher profits that are essential to offsetting the enormous fixed costs associated with running a horizontal search engine (indeed, Google reported that it invested over \$2.8 billion in 2011 just in datacenters and related equipment).²⁰ As the U.S. Department of Justice explained in approving the combination of Microsoft's and Yahoo!'s search businesses:

"The search and paid search advertising industry is characterised by an unusual relationship between scale and competitive performance. The transaction will enhance Microsoft's competitive performance because it will have access to a larger set of [search] queries, which should accelerate the automated learning of Microsoft's search and paid search algorithms and enhance Microsoft's ability to serve more relevant search results and paid search listings, particularly with respect to rare or "tail" queries. The increased queries received by the combined operation will further provide Microsoft with a much larger pool of data than it currently has or is likely to obtain without this transaction. This larger data pool may enable more effective testing and thus more rapid innovation of potential new search-related products, changes in the presentation of search results and paid search listings, other changes in the user interface, and changes in the search or paid search algorithms."²¹

While these returns to scale are substantial for smaller market participants, they taper off as a search engine reaches a certain size -- one that Google passed years ago.²² Google, which understands this dynamic better than anyone, has for years deprived competitors of the ability to compete by engaging in a systematic though largely hidden effort to lock them out of opportunities to gain scale. The loss of competition and diminished incentives to innovate flowing from Google's conduct result in far greater harms to consumers than any legitimate, pro-competitive benefits that might arise from it.

Google also holds a massive scale advantage in collecting and exploiting user data for targeted advertising -- an advantage Google solidified recently when it changed its privacy policies to grant itself broad rights to combine user data it collects across more than 60 Google services.²³ These scale advantages are even more acute in mobile given the unique opportunities to collect user data that mobile devices provide:



Google’s business model in mobile is focused on collecting as much information about consumers as possible in order to show them more ads and increase the prices it can charge for them. As Google’s Senior Vice President for Mobile Andy Rubin said, “We don’t monetise the thing we create . . . We monetise the people that use it. The more people use our products, the more opportunity we have to advertise to them.”²⁴

The anti-competitive impact of Google’s practices is more severe because they are taking place within a regulatory environment in which Google is uniquely placed to maximise its profits while market actors in upstream (input) relationships are subject to significant regulatory constraints. Perhaps the clearest example is the regulatory regime applicable to European mobile operators. Mobile operators in the EU – over whose networks Google’s mobile services are supplied - are subject to a range of regulatory obligations affecting most elements of their commercial behavior. These include:

- Onerous and costly market entry requirements under the terms of the *Authorisation Directive*;²⁵
- Regulation of key operating conditions (e.g., price caps imposed on international roaming relationships under the *Roaming Regulation*;²⁶ capping of mobile termination rates under the *Termination Rates Recommendation*;²⁷ regulation of wholesale mobile access and call origination under the *Framework Directive* and *Access Directive*²⁸); and
- A swathe of contractual, transparency and consumer protection provisions under the *Universal Service Directive*.²⁹

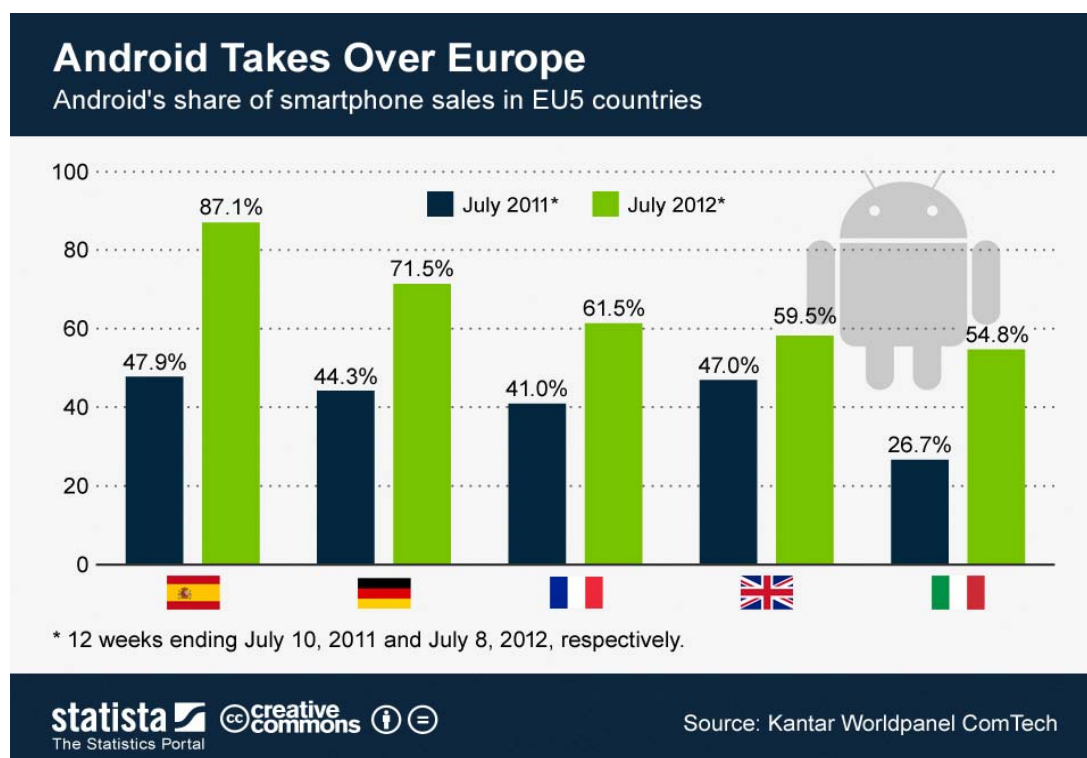
Similarly, websites and other online publishers – whose content populates Google’s search results and thus drives its revenues - are subject to a range of free movement constraints and competition law restrictions on their ability to license content, as well as restrictions arising from the laws of libel, consumer protection, and other rules.³⁰

By contrast, Google benefits from a regulatory regime that allows it to operate relatively unfettered. In these circumstances, concerns about markets “tipping” in favor of Google are paramount. The usual competitive constraints imposed by potential or fringe competitors will be absent where those competitors’ costs of doing business are heightened through their compliance costs with regulatory obligations and their lack of flexibility in responding to sudden shifts in value in the Internet ecosystem.

While competition regulators are rightly focused at present on crafting remedies for Google’s anti-competitive conduct in search and search advertising, separate investigations and remedies will be necessary to address Google’s distinct anti-competitive actions in mobile. The sections that follow describe several of these actions in more detail.

Subsidising money-losing ventures in order to control the mobile Internet

Android, Google's operating system (OS) for smartphones, tablets, and other mobile devices, is key to Google's quest to monopolise the mobile Internet. The speed of Android's domination has been stunning. Although the first smartphone running Android was launched fewer than four years ago, Android smartphones now represent between 50-80% of all smartphone sales in many European markets.³¹ Over 1.3 million new Android devices are activated each day.³² The chart below illustrates the growth of Android's dominance in several European markets over just the past year:³³



In the three months ending June 2012, Android devices outsold Apple's competing iOS devices three to one while capturing 64% of the worldwide market share.³⁴ As one analyst noted, "There is no denying Android's dominance anymore."³⁵

Despite Android's success, Google does not make money from Android directly. That's because Google views Android not as a product in the conventional sense, but as a Trojan horse in its battle to dominate mobile advertising and defeat any rival that challenges this dominance. Specifically, Android gives Google the ability to constrain the development of competing mobile apps, services, and ad platforms that could threaten its dominance in search advertising and related markets. As one analyst noted, Google developed Android as "a defensive loss leader to prevent the coming generation of users who are primarily on mobile from abandoning Google's core search product."³⁶

Google's anti-competitive tactics with Android include the following:

Losing money on Android to foreclose competition in mobile.

Android did not dominate the smartphone market through innovation. Indeed, a jury recently awarded \$1 billion in damages against a leading smartphone manufacturer because Google's Android

software running on its phones copied several patented inventions.³⁷ The reason for Android's meteoric rise is the lower price for Android devices,³⁸ which is possible for one simple reason: because Google gives away the Android code for free. Google even provides financial incentives to some operators that agree to use Android, essentially making it better than free to those operators.³⁹ In short, of the billions Google spends on Android, it recoups none of that in royalties.

It is not uncommon, of course, for a company to offer one product for free (or below cost) and recoup its costs by charging for a related product or service. Telecommunications operators do so all the time, for instance when they offer handsets at reduced prices. In many cases, this practice benefits consumers and spurs competition. Also, device manufacturers and operators clearly incur costs in launching mobile devices beyond the cost of the operating system, and there is nothing inherently wrong with another company subsidising those costs so that it can generate revenue in related areas.

The reason Google's pricing of Android is anti-competitive is because Google subsidises Android with the clear aim of protecting its search and search advertising monopolies from competition.⁴⁰ It also imposes a range of contractual and technical constraints on Android that are not necessary for the proper functioning of Android but that dissuade licensees from using anyone other than Google for search, search advertising, and a variety of other services -- the effect of which is to entrench Google's dominance in these markets and to foreclose competition. In short, "Android is another 'channel' for distribution of [Google's] Search and AdSense" services.⁴¹ As one analyst recently explained,

"Android, as well as Chrome and Chrome OS for that matter, are not 'products' in the classic business sense. . . . Rather they are very expensive and very aggressive 'moats' [against competition], funded by the height and magnitude of Google's [search monopoly] castle. Google's aim is defensive not offensive. They are not trying to make a profit on Android or Chrome. They want to take any layer that lives between themselves and the consumer and make it free (or even less than free). . . . In essence, they are not just building a moat; Google is also scorching the earth for 250 miles around the outside of the castle to ensure no one can approach it."⁴²

While getting Android for free might have short-term advantages for mobile device manufacturers, Google's practices impose long-term harms on the mobile ecosystem. Using its search advertising profits to undercut competitors' prices while simultaneously preventing mobile device manufacturers and mobile operators from using competing services is the opposite of competition on the merits. The ultimate victims of Google's predatory pricing and tying are consumers, who will suffer fewer choices and stagnant product development in the mobile space. Furthermore, once Google succeeds in eliminating competing OS suppliers, it will be free to begin charging higher prices for Android as well.

If that sounds unlikely, consider this. Several years ago, Google introduced a new web analytics service called Google Analytics. At the time, the market for web analytics (which helps web sites measure and analyse traffic to their sites) was flourishing; companies were innovating rapidly and competing vigorously. Google, however, shocked the market by offering Google Analytics for free. Google Analytics also gave Google access to a treasure trove of information about users' web surfing behaviour that it could turn around and use to charge higher prices to advertisers (i.e., customers of its separate monopoly AdWords ad platform). As a competing web analytics provider wrote at the time:

"Google has killed the web analytics software industry with the release of the new version of Google Analytics"

“Google Analytics version 2 is not revolutionary. It does not extend web analytics software by providing new forms of analysis. Neither does it extend our understanding of websites by offering new approaches. What Google has done is simply take every feature in every product on the market and put them all into one system, and then make it available for free.”⁴³

The author concluded, “Google Analytics does for the web metrics industry what the Google search engine did for online search: it kills everyone else off.”⁴⁴ These words were prescient, for once Google Analytics became dominant and had forced many rivals to exit the market or develop new business models, Google suddenly changed course and began charging high-volume users of Google Analytics \$150,000 per year.⁴⁵

Likewise, online mapping companies, including ICOMP members StreetMap, HotMaps, and Bottin Cartographes, have alleged that they were priced out of the market by Google Maps, which offered its APIs (application programming interfaces) free to businesses until 2011. According to a decision by the French Commercial Court, Google was able to offer its Maps API service at no cost by cross-subsidising it with its other services, and in this way failed to recoup its costs for product development and mapping data.⁴⁶ Google’s predatory pricing made competing mapping services less attractive to advertisers and less able to invest in new features and services.⁴⁷ Google Maps also gave Google access to valuable information about mobile users and new ad-targeting possibilities that it was uniquely positioned to exploit through its dominant AdWords ad platform. As one observer wrote:

“[Google] likes to talk about services such as Maps and Earth as if they were providing them for fun – a neat, free extra as a reward for using their primary offering, the search box. But a search engine, in some sense, is an attempt to map the world of information – and when you can combine that conceptual world with the geographical one, the commercial opportunities suddenly explode. Search results for restaurants or doctors or taxi firms mean far more, and present far juicier opportunities for advertisers, when they are geographically relevant.”⁴⁸

Once Google was able to solidify Google Maps’ dominance, Google switched course and, as with Google Analytics, began charging large-volume customers to use it.⁴⁹

Similarly, Google initially offered its price comparison service, Google Product Search (later renamed “Google Shopping”), as a free service to retailers and helped that service gain market share by giving it preferential placement in Google’s search results⁵⁰ (which imposed separate anti-competitive injury on competing price comparison services, given Google’s monopoly power in search). Once the service gained significant market share, however, Google began charging retailers to be included in its listings.⁵¹

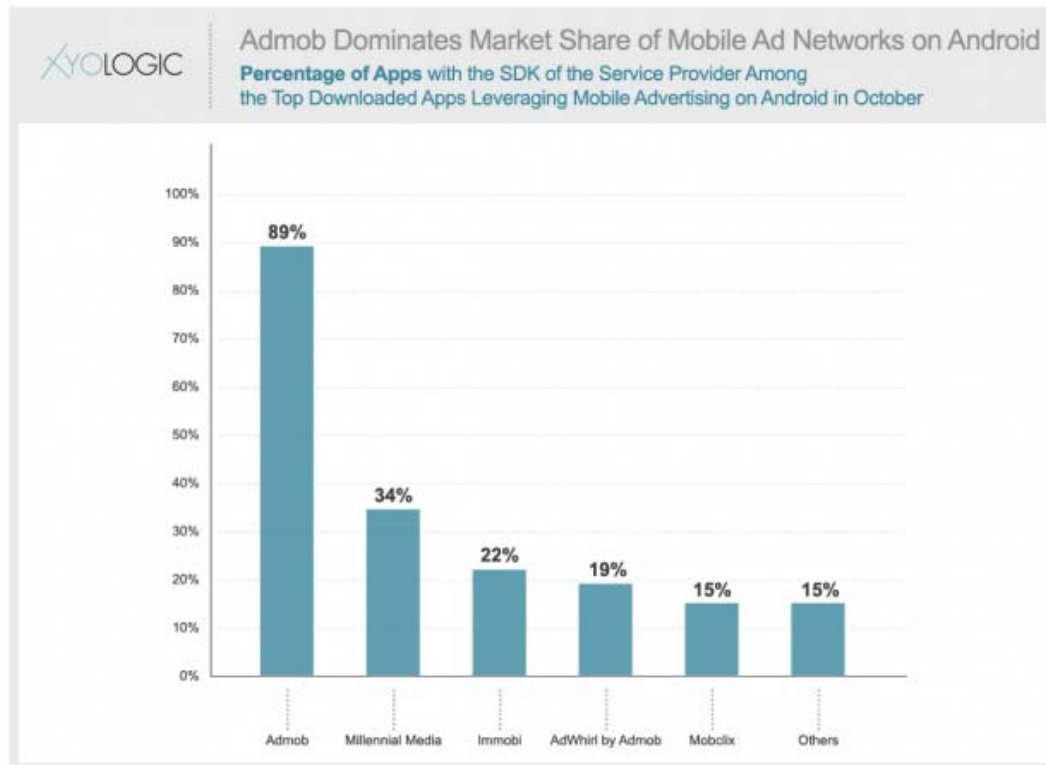
Given these examples, there is every reason to believe that, if given the opportunity, Google will begin charging higher prices for Android once it has solidified its grip on the mobile OS market and crushed potential rivals. These concerns are merely one illustration of the potential anti-competitive effects of Google’s market power. By constantly reinforcing its overwhelming dominance in search, Google grants itself the short-term luxury of leveraging that dominance into any and all adjacent areas of the Internet value chain. In doing so, it consistently cross-subsidises its services with a view to excluding rivals. Where Google cannot achieve this exclusion through subsidised pricing alone, it engages in tying or other anti-competitive practices, or in the strategic, pre-emptive acquisition of niche competitors (see discussion below). The net effect is to preserve and extend Google’s monopoly power.

Reinforcing Android's dominance through strategic acquisitions

Google also has engaged in a series of strategic acquisitions to make Android even more effective in solidifying Google dominance in mobile advertising and killing off competitive threats:

- **AdMob.** As discussed in *Google's Efforts to Monopolise Key Segments of the Mobile Ecosystem*, when Google announced its intent to acquire AdMob in November 2009, it had already gained a large share of mobile search advertising. Nonetheless, it faced a major threat from ads served to mobile users directly within their mobile apps. Because people were increasingly using mobile apps to locate specific information, these apps, and the ads served in them, posed a threat to Google's search advertising business. AdMob at the time was the leading network for serving in-app mobile ads and had a strong position with developers of apps for Apple's iPhones, which at the time posed the biggest competition to Android phones. Critics of the acquisition warned that Google's acquisition of AdMob would constrain in-app advertising as a potential counterweight to Google's mobile search dominance. After review, U.S. antitrust enforcers ultimately decided to let the deal proceed, although noting that the decision was "a difficult one because the parties currently are the two leading mobile advertising networks."⁵²

Since that time, Google has used AdMob to dominate mobile in-app advertising. Google gave itself a major lift in this when it integrated AdMob into its monopoly AdWords ad platform. In one fell swoop, Google added 350 million mobile devices and 300,000 mobile apps into the AdWords universe, thereby catapulting its advertiser base far beyond what any competitor could achieve and capturing the vast majority of ad opportunities on mobile phones. This move made it significantly harder for other mobile ad platform services to obtain the minimum scale they needed to compete -- precisely the strategy Google used to obtain monopoly power in search and search advertising -- while allowing Google to leverage the scale advantages of its monopoly search ad platform (AdWords) into its mobile app advertising business. Not surprisingly, Google has used its control over Android to propel AdMob into the leading provider of in-app ads on Android devices by a wide margin.⁵³



- Zagat and Frommers.** One of the most common things people do with mobile devices is search for “local” information -- reviews on nearby restaurants, insights on local attractions, directions, etc. Mobile devices are uniquely suited to this because they can automatically customise search results, ads, or other content and then continue to update and refresh those results based on where the user is at any given moment. This is hugely valuable for advertisers, both because it helps them target ads to interested consumers more effectively and because it allows them to catch consumers at or near the point of a purchase decision. Services that provide this localised information on mobile devices could have posed a major threat to Google’s search business because they provide results -- and ads -- that are likely to be much more relevant and useful than the non-specialised results available on Google Search. For that reason, “Local search is becoming a crucial battleground online as the smartphone and tablet computer boom puts the web in more pockets and handbags around the world.”⁵⁴

For many years, Google was able to attract users, advertisers, and partner websites by promising that it would not offer local or other content itself, but instead simply act as a conduit to other people’s content.⁵⁵ For instance, in a 2010 interview, then-CEO Eric Schmidt said Google would be “‘careful to define a line where we don’t cross into content’ and wanted to remain a ‘neutral platform for content and applications.’”⁵⁶ As with in-app advertising, however, once Google recognised the threat that local content providers posed to its search and search advertising monopolies, it quickly moved to vanquish these threats.

A key step in this strategy was Google’s acquisition earlier this year of two well-known travel brands: Zagat (restaurant reviews) and Frommers (travel guides). Both brands specialise in “local” information and thus are particularly relevant to mobile consumers -- and to the advertisers trying to reach them. This aggressive shift by Google -- away from being a neutral platform that points to other people’s content, to being the actual supplier of content -- reflects Google’s no-holds-barred effort to protect its \$39 billion advertising business as online commerce goes mobile. As one observer wrote on the Frommers and Zagat acquisitions:

“By moving upstream, Google is turning [to] its so-called monopoly in search to drive traffic to its own content at the expense of any non-Google property.

“Imagine Lonely Planet or Fodor’s trying to get traffic from Google search results when their primary competitor is now owned by Google?

“This not only spells trouble for any competitor who gets traffic from Google (eg., all of them), but also is potentially hazardous to users who expect unbiased search results (despite many studies suggesting Google has already strayed far from objectivity, the average person still expects it).”⁵⁷

- **Motorola Mobility.** Google’s largest acquisition by far, both in the mobile space and overall, was Motorola Mobility in 2012 for \$12.5 billion. While some questioned Google’s rationale for the deal and its hefty price tag, there is no question that it will give Google greater leverage to force third parties to favour Google search and related mobile services on Android devices. First, by ensuring that the first Android smartphones to market (those by Motorola) will have Google Search and other key services as defaults, Google will be able to set consumer expectations and give added weight to threats to withhold new Android code from device makers that hesitate to follow suit (conduct that would be entirely “rational” from a monopolist unchecked by competition enforcers).

Second, the Motorola Mobility acquisition gave Google access to the company’s vast portfolio of patents on key mobile technologies. Although ultimately deciding not to block the transaction, competition authorities in both Europe and the United States acknowledged the concern that Google could use its control over certain “standard-essential” patents in Motorola Mobility’s portfolio to foreclose competition by rivals.⁵⁸ Even beyond these concerns, Google has the ability and incentive to condition the licensing of key patents on manufacturers and operators agreeing to preference Google search and other services on their devices (through default settings, dedicated hardware keys, and the like). Having this added patent leverage will also allow Google to decrease the percentage of advertising and other revenues that it currently shares with mobile device makers and operators to convince them to use Android.

Foreclosing competing search providers from Android.

Google has imposed various restrictions on Android that make it impossible for others to compete on equal terms with Google on Android devices. These anti-competitive tactics are part of a broader strategy of locking out rivals from opportunities to gain scale -- thereby preventing them from mounting effective competition to Google. These points are described more fully in Part VI.

Engaging in a pattern of deception to advance its monopolistic goals

Google has repeatedly misled mobile industry participants, regulators and consumers in order to solidify its dominance in mobile. Google's false and misleading statements have distorted the market by dissuading competitors and consumers from taking actions they would or might have taken that could have injected greater competition into the market. As competition enforcers investigate Google's conduct, they should take into account Google's history of deception as they seek to craft effective and durable remedies to restore competition. Examples of Google's deception include the following:

- **False promises of Android's openness.** When Google launched Android in 2007, it lured partners and consumers into using Android by promising it would be fully open and free, so that "no industry player can restrict or control the innovations of any other."⁵⁹ These promises of openness baited device manufacturers and mobile operators into adopting Android and to building marketing strategies and businesses around their Android offerings.

Since that time, Google has systematically tightened its grip on Android to block companies from using services that compete with Google's own services, even threatening retaliation against "partners" that had the temerity to enter into deals with Google's competitors. For instance, Google pressured Motorola and Samsung to drop a competing location-based service by Skyhook Wireless on their Android phones and to use Google's inferior service instead. More recently, Google succeeded in pressuring Acer not to offer competing smartphones built on the Android code base by threatening to cancel Acer's license to sell Android phones (these and other exclusionary practices are described more fully in Part VI).

The result is that Android today is a far cry from Google's early promises of openness. As noted in a VisionMobile study partially funded by the European Commission, "Android ranks as the most closed [open source] project" reviewed in the study.⁶⁰ When set against Google's lofty claims of Android's openness, its description of how Google manipulates Android for its own anti-competitive purposes is damning:

"Google tightly controls the Android platform and its derivatives, i.e., the make-up of the Android platform on commercial handsets. Device manufacturers must pass the Compatibility Definition Document (CDD) and Compatibility Test Suite (CTS) tests in order to be allowed use of the Android trademark, the Android Market or other important Google Mobile Services such as GMaps, Gmail and GTalk.

"The CDD lists the minimum set of functionalities and technologies that an Android device must contain in order to use the Android trademark. Whilst the documentation acknowledges that components can hypothetically be replaced with alternate implementations, this practice is strongly discouraged, as passing the CTS tests will become substantially more difficult. . . .

"Devices that pass the CTS can then "seek" approval to use the Android trademark and the Google Mobile Services, although the final criteria appear both undocumented and somewhat capricious.

"As Google's Dan Morrill put it in an e-mail on Aug. 6, 2010, "We are using compatibility as a club to make them [OEMs] do things we want." . . .

“It is also worth noting that Google requires parties joining the Open Handset Alliance to sign up to an “anti-fragmentation” agreement, although we understand that the contents of that agreement are rather vague and reference primarily the Android Compatibility program. There are rumours that Google is now asking OEM licensees to also sign similar anti-fragmentation agreements, which has prompted complaints to the U.S. Department of Justice.”⁶¹

- **Stealing user data from WiFi networks.** Google continually seeks out new sources of data about consumers and their web surfing habits because this allows Google to target ads more effectively and increase profits. Particularly in the mobile context, being able to link these data to a user’s location is potentially valuable. Recognising this, Google deliberately engineered its StreetView cars (the cars taking pictures of homes and other locations for Google’s StreetView mapping service) also to collect data on the location of private WiFi networks. These data were of clear commercial benefit to Google. As France’s data protection authority (the Commission Nationale de l’Informatique et des Libertés) concluded:

“[C]ollecting data, in particular users’ MAC addresses, allowed the company to enrich its localisation databases thanks to the MAC addresses of the WiFi routers recorded by its moving Google Cars. The collected data grants to the company an undeniable advantage over its competitors, and allows it to offer efficient geolocation services. Geolocation services offered by the company, which generates important traffic, are therefore likely to produce advertising revenues amounting to the major part of the company’s turnover.”⁶²

In fact, however, Google was collecting not only WiFi location data, but also secretly stealing the content of actual consumer communications from unencrypted WiFi networks. When later uncovered, the scandal was described as “one of the most massive surveillance incidents by a private corporation that has ever occurred.”⁶³ Even worse was Google’s string of false and misleading statements to privacy regulators and consumers about its actions and its repeated efforts to obstruct investigations into its conduct. For example:

- When German regulators initially demanded that Google allow them to review the data being collected by StreetView cars, Google refused, insisting that its cars had “never collect[ed] the content of any communications.”⁶⁴ Two weeks later, after ongoing pressure from regulators, Google suddenly changed its story, admitting that its StreetView cars had been “collecting samples of payload data from open (i.e., non-password protected) WiFi networks” but claiming that no personally sensitive information had been collected.⁶⁵
- Five months later, after Canadian authorities completed their own independent review of the data collected, Google changed its story again and was forced to admit that “in some instances entire emails and URLs were captured, as well as passwords.”⁶⁶
- Google repeatedly claimed that its collection of private user data “was a mistake” and that “the project leaders did not want, and had no intention of using, payload data.”⁶⁷ An investigation by the U.S. Federal Communications Commission (FCC), however, determined that “the data collection resulted from a deliberate software-design decision by one of the Google employees working on the Street View project” and that the employee “intended to collect, store and review payload data for possible use in other Google products.”⁶⁸ The FCC also concluded that Google had “deliberately impeded and delayed the [FCC]’s investigation.”⁶⁹

While regulators understandably have focused on the privacy aspects of Google's deceptions and obstructionist tactics, competition enforcers also should take note. First, Google's repeated disregard for users' privacy interests has given it access to data that is extremely valuable for targeted advertising -- data that Google's competitors will need to collect through legal (and more expensive) means. Second, by deceiving users about its privacy practices, rather than competing on the true merits of these practices, Google's misrepresentations lead consumers and companies to select Google products and services when they might have selected competing alternatives had they known the truth about Google's conduct. Third, Google's disregard for the law and for regulators suggests that competition enforcers should build strong monitoring provisions and safeguards into any remedies ultimately imposed on the company.

- **Surreptitiously opting AdWords advertisers into mobile search.** Another example of Google deceit to strengthen its market power in mobile was its decision in 2008 to furtively change the default settings for its monopoly AdWords advertising platform so that advertisers were automatically opted into participating in mobile search advertising.⁷⁰ According to a 2010 presentation by online advertising analyst Simon Buckingham:

"On 8th December 2008, Google extended their Internet [advertising] products to the mobile platform simply by changing the default campaign settings for AdWords from Desktops and Laptops to Desktops, Laptops, **and mobile devices with full Internet browsers (smartphones)**, and this has remained the default ever since. . . . Google not only changed the default for new AdWords campaigns to automatically include smartphones, it also **retroactively** altered the campaign settings for all active AdWords campaigns to run across both platforms . . ." ⁷¹

This artificially drove up prices for Google's mobile search ads because many more advertisers were bidding against each other for a finite number of ads. Because Google failed to notify advertisers of this change at the time, many ended up paying for mobile search ads they didn't want – *e.g.*, because they had not yet modified their websites to be viewable on mobile devices. By deceiving advertisers in this way, Google generated huge revenues and placed other mobile ad platforms, with fewer advertisers, at a major competitive disadvantage.

Using anti-competitive tactics to lock out competitors on mobile devices

As ICOMP documented in last year's *Google's Efforts to Monopolise Key Segments of the Mobile Ecosystem*, Google has engaged in a variety of tactics to lock out competitors from key commercial opportunities in the mobile space. As competition enforcers investigate whether these tactics violated applicable competition rules, they should bear in mind that Google's actions have potentially far greater anti-competitive impact in the mobile sector. This is due to a variety of factors -- for instance, the greater difficulty users often face in switching the default search engines on mobile devices; the fact that users are less likely to use an alternative to the default search engine on their mobile devices than on their PCs; and the closer linkages between search, search advertising, location-based services, and in-app advertising on mobile devices than on PCs. Indeed, because obtaining the default search position on mobile devices can be, in practical terms, nearly equivalent to exclusivity, the competitive value to Google of locking up the default position for its search, mapping, app store, and other services is far greater on mobile devices than it is on PCs.

Google's anti-competitive actions described in ICOMP's earlier paper on competition in mobile, the effects of which continue today, include the following:

- **Using Android compatibility testing “as a club.”** Google carved out certain features from Android that are highly valuable to smartphone users -- such as search, mapping, an app marketplace, and others -- and placed them into closed-source, proprietary software packages that are segregated from the “open” side of Android. Google then uses something it calls the “Android Compatibility Program” to block handset makers and mobile operators from using anything other than Google’s proprietary offerings for these services.

Perhaps the best-known example of this strategy is Google’s efforts to block Motorola and Samsung from offering Android devices that used a location-based service offered by a company called Skyhook Wireless. When Google learned that Motorola and Samsung intended to use Skyhook’s location positioning service on their Android phones, Google quickly intervened and forced them to use a service offered by Google instead – even though Skyhook’s technology was regarded by many as superior.⁷² This allowed Google to monetise users’ location data through mobile advertising and prevented competing ad platforms from utilising this location data. In an email discovered by Skyhook in the course of its antitrust lawsuit against Google, a Google Compatibility Program manager admitted to a colleague that Google uses compatibility as a “club” to make phone makers “do what [Google] want[s].” He also suggested that Google uses compatibility as an excuse for denying approval of third-party applications even when it has “no clear basis for saying [the applications] violate the Android security model.”⁷³

As described in the EU-sponsored study referenced earlier, Google also offers early releases of new versions of Android to preferred manufacturers that agree to include Google Search as the default on their devices, which likewise has the effect of penalising companies that don’t agree to do Google’s bidding. It also has taken steps to force companies using Android to sign an “anti-fragmentation” agreement -- purportedly designed to prevent the Android source code from splitting into several different versions -- that may serve similar anti-competitive purposes to Google’s compatibility testing.⁷⁴

- **Threatening retaliation against operators and device manufacturers.** On several occasions, Google has reportedly threatened retaliation against companies offering Android devices who sought to offer competing mobile devices or to pre-install non-Google search or related services.

For instance, in September of this year, Chinese company Alibaba accused Google of forcing Acer, a phone manufacturer, to break off Acer’s planned release of phones running Alibaba’s mobile operating system by threatening to cancel Acer’s license to sell Android phones.⁷⁵ Google’s threat reportedly came shortly after an Alibaba executive expressed his company’s desire to compete aggressively with Android in the Chinese market.⁷⁶ In 2011, Korea’s two leading search engines – Naver (owned by NHN) and Daum – accused Google of violating Korean competition law by preventing Android suppliers from pre-installing competing search services. According to NHN, if smartphone manufacturers sought to install a competing search service, “Google purposefully delayed a compatibility test that smartphone manufacturers are obliged to go through before releasing Android phones.”⁷⁷ Google reportedly used similar tactics to prevent Verizon from offering Microsoft’s Bing search engine on Verizon’s Android phones by threatening to block Verizon’s shipment of Android phones if Verizon did not comply.⁷⁸

Google’s threats of retaliation and punishment against its “partners” have no conceivable pro-competitive purpose or effect. Their sole purpose is to kill competition to Google’s Android phones and its search and related services and to prevent competitors from achieving the scale they need to offer compelling, competitive alternatives to Google.

- **Entering into exclusive deals.** Google also deprives competitors of the ability to gain scale by entering into exclusive deals -- including deals on which it may lose money but which have the effect of depriving competitors of opportunities to acquire the scale they need to compete effectively. As explained in ICOMP’s *Google Under the Antitrust Microscope* in describing Google’s

similar exclusive agreements with websites and software distributors, these deals are anti-competitive because they “hamper[] rivals’ ability to attract users and tend[] to lock computer users into Google services.”⁷⁹ Specifically, they may “deprive competing search engines of crucial input, limit[] advertiser options and degrad[e] the overall end user experience -- ultimately having the effect of smothering innovation.”⁸⁰

Among the most commercially significant of these deals came in 2007, when Apple agreed to make Google the default search engine on Apple’s iPhones.⁸¹ This deal, which occurred while Google’s then-CEO Eric Schmidt was on Apple’s board of directors, solidified Google’s position in mobile search, in part because iPhone users tend to conduct far more searches than users of other phones.⁸² Although Apple recently announced that it intends to replace Google search with its own search technology, Google’s original exclusivity on the iPhone was a major contributing factor to Google’s current monopoly in mobile search.

Google has entered into similarly exclusive deals with many other companies. For instance, in 2006, Google concluded an agreement to become the default search engine for Vodafone, which at the time was the second largest mobile carrier in terms of number of subscribers world-wide.⁸³ In 2009 and 2010, Google entered into similar deals with France Telecom / Orange⁸⁴ and Deutsche Telekom, respectively.⁸⁵ In late 2011, Google renewed its deal to be the default search engine on Mozilla’s Firefox web browser, guaranteeing payments of close to \$1 billion for the three-year deal.⁸⁶ More recently, Google extended its deal with Norway’s Opera Software to be the default search engine on Opera’s mobile browser (and other browsers).⁸⁷ This is a significant deal, as Opera’s mobile browser reportedly has over 200 million monthly unique users as well as a significant mobile ad presence.⁸⁸

Google wins these deals because it can offer third parties better financial terms than any competitor could offer, and often at a loss. The only reason it can do so is because of the massive scale advantages it has in search -- advantages it has systematically denied to competitors -- and the monopoly profits it earns through its illegally acquired dominance in search and online advertising.

Google has engaged in similar anti-competitive strategies with respect to other mobile services. For instance, Google reportedly uses its compatibility testing to pressure device manufacturers and mobile operators to use Google Maps as the default mapping service on their devices. Likewise, mobile devices reportedly are not permitted to access Google Play -- Google’s online store for music, books, videos, apps, and other content -- unless they include Google Search as a default and pass other opaque “compatibility testing” requirements. Thus, Google Play is another point of leverage through which Google forces OEMs and operators to use Google services as the defaults on mobile devices.⁸⁹

Taken together, these actions give Google the ability to lock up so many commercial opportunities and collect so much data for ad targeting that rivals simply cannot mount effective competition to Google. Giving its own mobile services preferential treatment also gives Google a major advantage over competing suppliers. As apps and mobile services markets become increasingly crowded, app and mobile services suppliers are finding it increasingly hard to attract users, and the cost of acquiring new users is skyrocketing. Forcing mobile device manufacturers and operators to extend preferential placement to Google’s services allows Google to avoid these costs.

Conclusion

Mobile represents the future of online advertising and commerce. Preserving a competitive level playing field in this sector is absolutely vital to Europe's digital future. Google's dominance in mobile search and advertising is even greater than on the PC, and its use of Android and various exclusionary tactics as competitive weapons to dominate mobile search and advertising is impeding investment, innovation and growth across the mobile ecosystem.

The power Google is amassing in the mobile sector will allow Google to control what people see, monitor what they buy, and act as the universal toll booth for all commerce on the mobile web -- placing Google's interests diametrically opposed to those of its users and customers. By foreclosing competition, Google will also stifle the innovation that benefits consumers and the larger mobile ecosystem. Even as competition enforcers in Europe and elsewhere seek remedies for Google's anti-competitive conduct in search and search advertising, it is critical that they act swiftly and decisively in addressing Google's anti-competitive acts in mobile as well.

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