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The Battle for Search: United States v. Google LLC and Its Implications for Antitrust Law

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I. Introduction

In the ongoing antitrust case *United States v. Google LLC*, the central question is whether Google's agreements to secure default status for its search engine with device manufacturers like Apple, browser developers and mobile carriers are part of a strategy to maintain its monopoly position.[1] Google is accused of using this strategy to effectively block competitors from reaching a sufficient user base to achieve minimum efficient scale. A central question in the case is what role substantial payments to secure default status can play in such a foreclosure strategy.

This theory looks at first sight like a standard foreclosure theory of harm for an exclusive dealing arrangement along the lines of the US Microsoft case, which the court explicitly refers to. We show in this paper that this is only superficially the case and that the issues are in fact significantly more complicated in this case than in either the US or EU Microsoft cases. This does not become clear in the judgement because of an insufficiently precise analysis of market definition and a limited use of the cited evidence. Furthermore, the lack of counterfactual analysis leads to a mistaken assessment of default payments necessarily being anticompetitive for a dominant company. [2] We show that these flaws complicate the assessment of adequate remedies that address actual anticompetitive behaviour while not distorting the efficient operation of the market.

Section 2 of the paper sets the legal foundation by outlining the legal framework under Section 2 of the Sherman Act, focusing on the doctrine of monopolization, and the need to prove causation. Section 3 reexamines the evidence presented in the judgment and shows that the market definition analysis is flawed. Section 4 then builds on this foundation to critically review potential theories of harm. In Section 5 we discuss the challenges for designing remedies based on the insights from the market analysis in the previous two sections. Section 6 concludes.

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U.S. and Plaintiff States v. Google LLC [2023]. This reflects the ongoing antitrust case brought by the U.S. Department of Justice against Google.

[2]Manne makes similar points in his paper. He focusses more on the legal issue of the correct standard for finding causality, which guides his discussion of the evidence, showing that Google's strong position in search is not materially the result of obtaining the default position on Apple devices. Our paper takes a somewhat different perspective by focussing on how competition in the market works and pointing out that the conclusion, that a dominant company making a payment for default can be interpreted as anticompetitive behaviour, arises from a mistaken market definition analysis and a lack of an economically well specified theory of harm. See Geoffrey A. Manne, "A Critical Analysis of the Google Search Antitrust Decision" 14 August 2024, ICLE White Paper 2024-08-14.

II. The Legal framework and causation

2.*1 Monopolisation under US antitrust law*

Under Section 2 of the Sherman Act, the law prohibits any person or entity from monopolizing, attempting to monopolise, or conspiring to monopolize any part of trade or commerce among the several states or with foreign nations. Monopolisation, in this context, refers to a firm's conduct aimed at maintaining or increasing its monopoly power through anticompetitive means rather than competing on the merits. To be considered exclusionary in this sense and thus illegal, a monopolist's conduct must have an anticompetitive effect - that is, it must harm the competitive process itself and thereby harm consumers. Merely harming individual competitors is not sufficient.[3]

2.2 The Established 'But-For' Causation Standard

To establish that a conduct is anticompetitive it is necessary to establish whether the conduct caused a negative impact on the market. In monopolisation cases under Section 2 of the Sherman Act, the 'but-for' causation standard is the generally accepted approach. This standard requires the plaintiff to demonstrate that, but for the defendant's conduct, the alleged harm to competition would not have occurred. Essentially, the plaintiff must prove that the defendant's actions were the direct cause of an anticompetitive effect observed in the market.

The 'but-for' standard was established in *FTC v. Rambus*[4] and is a rigorous test that requires clear evidence linking the defendant's conduct to the alleged competitive harm. It has become the default causation test in monopolization cases and is meant to ensure that only practices that directly harm the competitive process are challenged, while legitimate business practices that benefit consumers remain protected. To establish the factual basis for the test, economic analysis or expert testimony is often necessary, especially in complex cases.

2.3 The Exception in the Microsoft Case: 'Reasonably Capable of Contributing' Standard

The landmark *United States v. Microsoft* case has created an exception to this standard. The court applied a different causation standard due to the unique circumstances in the case.[5] In Microsoft, the theory of harm was about the suppression of *nascent competition* in the middleware market, which could have facilitated the substitution away from the established market on which Microsoft offered its PC operating system.

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[3] *Aspen Skiing Co. v. Aspen Highlands Skiing Corp*., 472 U.S. 585 (1985), 600-605. The US Supreme Court drew a distinction 'between practices which tend to exclude or restrict competition, on the one hand, and the success of a business which reflects only a superior product, a well-run business, or luck, on the other.'

[4] *Federal Trade Commission v Rambus Inc* 522 F 3d 456 (DC Cir 2008).

[5] *United States v Microsoft Corp* 253 F 3d 34 (DC Cir 2001).

The Rambus approach was not considered feasible by the Court in Microsoft because it was difficult to determine a sufficiently reliable counterfactual scenario in a setting where the claimed harm would develop in the future and concerned the exclusion of competitors that were not present in the market yet. To respond to this challenge, the court adopted the 'reasonably capable of contributing' standard ((RCS) (conduct that is "reasonably capable of contributing" significantly to a defendant's continued monopoly power). It was meant as an exception for cases in which a counterfactual could not be determined with sufficient reliability.[6]

2.4 Misapplication of the Legal Standard in the Google Case

In *United States v. Google LLC*, Judge Mehta relied heavily on the *Microsoft* precedent, treating it as a general rule. However, the Google case involves well-established competitors like Bing in a mature market. This difference is crucial because the court has compiled considerable evidence of the *actual* competitive interaction between *existing* competitors that allows for an approach to market definition and the development of counterfactuals that is grounded in evidence. This includes evidence for the role of potential competition from Apple, which could have created its own search engine. Even potential competition in the counterfactual can be assessed qualitatively in this case because Apple was already operating in the market environment and there is ample evidence on its decision making process about creating search functionalities. The appropriate standard in the spirit of *Microsoft* should thus have been the 'but-for' test, as articulated in *FTC v. Rambus*.[7] Applying this test would have required the DOJ to show that, absent Google's alleged anticompetitive behaviour, the market would have been more competitive. By applying the less stringent 'reasonably capable of contributing' standard from *Microsoft*, Judge Mehta effectively lowered the burden of proof for causation.

In this paper, we argue that the court had sufficient evidence to apply at least qualitatively the 'but-for' standard. Additionally, the court overlooked important evidence regarding consumer substitution, which could have played a critical role in understanding the competitive effects of Google's agreements and could have led to different conclusions on market definition. While it is unclear whether a deeper analysis of substitution would have altered the outcome, we show that addressing these economic factors and analysing the most likely counterfactuals seriously is at a minimum essential for assessing the case.[8]

III. The Market Definition is not based on Consumer Choice

From an economic perspective the court seems to have insufficiently assessed the available evidence on substitution. The court created a false dichotomy between either applying a formal SNIPP test or relying on a functional comparison of products. The latter was chosen because no SNIPP test was submitted by the parties. However, this approach cannot be justified in the light of the actual evidence on substitution the court had access to. From an economic standpoint, actual substitution evidence is always superior to functional comparisons because the latter ignores

[6] 253 F.3d at 79.

[7] See, for example, Competition on the Merits blog: https://competitiononthemerits.substack.com/p/competition-on-the-merits-us-v-google

[8] For a more extensive discussion on the counterfactual issue see also Manne supra.

how consumers value different features of the product. Substitution evidence incorporates this information.

Relying on a comparison of functionalities appears to have led the court to overlook two important aspects of market definition in this case: First, market definition in two- or multisided markets may require taking into account the way a zero-price product for users like a "generalized search service" is monetized by the service provider. Second, there are effectively three potential markets in which generalized search services are offered. First, there is a market for search services for an end user who makes decisions on where to search for information with a certain goal in mind. Second, there is a longer run decision of an end user, which general search service it wants to use as a default. Third, there is also a market for default settings chosen by web browsers or device manufacturers in which different search engine providers compete for being the default choice. We show that how market definition on the user side is assessed is also of central importance for evaluating the economic validity of market definition on the advertising side of search engines.

3.1 Appropriate market definition in this case must take into account the monetization of the end-user pool

A user of a search engine must generally make two choices. First, there is a long run choice about which general search engine to use as a default. Such default decisions matter to users because they do not want to choose every day which browser to use but instead work by default in their preferred environment. Even where there are default settings on a device or a browser, that choice remains and will depend on the user assessment of the qualities of different general search engines.

The effect of consumer choice apparently has not been inhibited considerably by pre-set defaults. The court extensively discusses the results of experiments, which show that Google users switch the default back to Google when confronted with an alternative search engine much more often than users of other search engines switch back when they face a different default.

Since search engines are offered free of charge, search engine providers compete primarily through quality improvements. The court judgement documents many incidents in which Google was concerned about quality improvements by rivals and potential rivals and as a result invested in quality improvements. This shows that Google was actively competing for users through investments in product improvement.[9] Once a default is set, users rarely switch between general search engines in the short run. Any short-run competition must come from more specialized search such as product search on Amazon and others, which offers a differentiated service. The court rejected that such sites are in the same market as general search engines on the basis of a functionality comparison: the latter are general while the former are specialized.

However, when focussing on product search, it becomes clear that there is substitution between the use of a general and a specialized search platform. Consumers who search for a product have many options and their search trajectory can be complicated. We know from evidence presented at trial that a very large plurality of users starts a product search on Amazon due to its broad range of products offered. But many also start at Google. In fact, a user starting at Amazon may be

[9] This is a marked contrast with the Microsoft browser cases in the US and Europe where part of the evidence for a lack of competition was the fact that Microsoft for years did not invest in innovations on its browsers. The evidence presented here is therefore considerably different from those cases.

dissatisfied with the range of choices and look whether a general search engine brings up more options. Of course, search trajectories can also go the other way around.

End users will search for products in the way that gets them the information they want the fastest. This means the relative usefulness for search of specific and general search engines will determine at what point in a product search journey the user uses a specific engine. In particular, if Google search is perceived to have good product search features it will make it more likely to be accessed earlier in the search journey and thus more often. This means that an improvement in product search quality will lead to substitution by users and generate Google more advertising revenue from advertisers who try to get the attention of users searching for products.

It is certainly true that users who do not search for products will not substitute Amazon or other sites on which product search can be done. They do not contribute to short run substitution. However, almost all advertising revenue at Google comes from product search queries so Google's incentives to improve quality are almost exclusively driven by monetizing product search. This means that one would expect Google as a general search engine to have strong incentives to perform well in product search. That is what we have seen in the market. While text search advertising is an important (and successful) feature of product search monetization, Google has also expanded into different types of product search results as in its Google shopping offer that includes pictures, and some comparison features between third party offerings. This is compelling evidence that Google is in the same market for product search queries as Amazon and others.

From a monetization perspective, attracting users for other search queries is at best a means to make them more likely to also enter product search queries in the Google search engine. Incentives to improve these services are then driven by indirect monetization of product search.

All these arguments are clearly supported by the evidence presented by the court. It is therefore at least questionable whether the conclusion of dominance of Google in end user facing markets has been proven by the court.

3.2 The Market for Default Settings

The court's failure to define a separate market for default settings is particularly surprising, since much of the case revolves around general search engines competing for default status on devices and browsers through paid agreements. Since users do not like to have unnecessary setup steps when switching to a new device, device manufacturers and browser providers have an incentive to select a default search engine. Choosing the most popular search engine minimizes user setup costs and leads to minimal setup costs for users as a whole.

However, the optimal choice of default from the perspective of users is not necessarily the socially optimal outcome in a two-sided market. The quality of the search engine's advertising platform determines the value of the platform for advertisers. Thus, the optimal default choice should maximize the joint surplus of users and advertisers. Since the evidence shows that Google is the preferred choice for both users and advertisers it should be expected to be the socially optimal default search engine in any market driven outcome.

A standard bidding market for default status would ensure that the search engine generating the most advertising revenue wins the default because it is willing to pay more for the default than a less advertising efficient rival. Users with strong preferences would still switch, but those without strong preferences between search engines would use the default, increasing the reach of the more efficient advertising platform. Since in this case Google is also the preferred search engine of users, the bidding process would yield the efficient outcome.

In practice, Apple did not organize a formal bidding process. But Google could anticipate that rival general search engines had an incentive to offer payment for default status to shift indifferent consumers to themselves. Google thus made a substantial payment to secure this status. Microsoft at a later time did indeed try to capture the Apple default by bidding all of its revenue but was outcompeted because Google was seen to generate more advertising revenue. The court's failure to acknowledge this normal market behaviour raises questions about what should genuinely be considered anticompetitive behaviour in this context. Economic analysis suggests that paying for default status is not sufficient to prove anticompetitive intent or effect. At best the allegation could be that Google only gained default status by paying excessively. However, this insight is only obtained when one acknowledges the fact that there is a genuine market for default status.

3.3. Are Product Search Advertising and General Search Advertising in the Same Market?

The court claims that vertical and general search advertising are in separate markets leading to the definition of a market for search text advertisement in which Google allegedly has a monopoly. This conclusion arises from a flawed functional comparison both in user and advertising market definitions that ignores actual user and advertiser substitution, monetization, and Google's competitive incentives.

First note that entering a search query in Google will generate both search text advertisement and "vertical search results" (i.e. search advertisement with pictures and specific products offered by different retailers). This means that a consumer who starts searching for a product on Google will generally see both types of information: advertisements for specific offers and text advertisements – often by retailers offering a range of product choices. It is typically not the case that a customer goes to search for a product on Google to get either text advertising or product advertising with a picture. The consumer tries to figure out what and where to purchase. Advertisers thus recognize that there is a mixture of advertisement types that customers can be reached by when they search on Google.

When customers search for a product on Amazon, they will only see the equivalent of a search result with pictures on Google, but no search text advertisements. However, this simply means that search advertising offers are differentiated. Since users substitute between the websites on which they do product search, different types of product search advertising also clearly compete. They are simply differentiated products: Even though the shown advertising mix is somewhat different on Google, it will compete with other websites on which product search is possible both in attracting user search queries and advertisers spend.

Unfortunately, evidence about how customers search for products and how advertisers react to customer search behaviour and the prices of Google and vertical search providers were not used in the proceedings. However, such evidence is easy to generate through instruments like survey research. The descriptive and introspective comparison of different types of advertising cannot elicit whether advertising on general search and vertical search are substitutes, albeit differentiated ones.

IV. Market Foreclosure: How sound is the Theory of Harm and what Counterfactual is Assumed?

Anticompetitive market foreclosure occurs when a dominant firm's actions effectively prevent rivals from entering or expanding in a market and this is the result of strategic behaviour to affect future competition instead of short run optimal competitive behaviour. In the Google case, the DOJ argues that by securing default search engine status on Apple devices and through similar agreements with other web browsers and device manufacturers, Google foreclosed competitor search engines from a significant share of the market. According to the DOJ, Google prevented other search engines from gaining the scale necessary to compete effectively.

Google, in contrast, argues that its dominance in the search engine market is a result of competition, not exclusionary practices. It maintains that browser developers chose Google as the default search engine based on its superior performance. Since users always had the option to switch to other search engines, Google asserts that it earned its default status by being the best in the market. This is supported by evidence suggesting that even without default agreements, Google's market share would remain strong.

In this section we show that the Google claims do have some merit from the point of view of economic analysis because the relevant economic theories of foreclosure do not imply that seeking default status and paying for it is necessarily anticompetitive even for a dominant search engine.[10]

We believe that there are two different theories of harm that need to be considered to assess the potential anticompetitive behaviour of Google. First, there is the question whether paying for default status for Apple devices leads to preventing other search engines from appearing on Apple devices and thus preventing them from developing into competitors. This is essentially the question that is addressed in the theory of harm and is discussed in the decision by analogy to foreclosure effects from exclusive dealing or as raising rivals' cost (RRC).[11] Second, there is a question whether the payment to Apple is simply a payoff to keep Apple from developing its own search engine. This is not exclusive dealing or raising rivals' costs, but more akin to pay-for-delay contracts in pharmaceuticals. We discuss the economic validity of these theories of harm below.

[10] We will not discuss the analysis of the contracts of Google with the makers of Android phones like Samsung, but similar arguments apply for those contracts as well.

[11] T. G. Krattenmaker & S. Salop, Anticompetitive Exclusion: Raising Rivals' Costs to Achieve Power Over Price, 96 Yale L.J. 234 (1986); A. Abbott & J. D. Wright, Antitrust Analysis of Tying Arrangements and Exclusive Dealing, in Antitrust Law and Economics 183 (Keith N. Hylton ed., Edward Elgar 2010); E. Elhauge, Defining Better Monopolization Standards, 56 Stan. L. Rev. 253, 315 (2003);J. D. Wright, Moving Beyond Naïve Foreclosure Analysis, 19(5) Geo. Mason L. Rev. 1163 (2012);

4.1 Is Paying for Default Status Exclusive Dealing and Exclusionary?

The conditions under which exclusive dealing can lead to anticompetitive foreclosure (i.e. RRC) are fairly limited. As Bernheim and Whinston have shown, bidding for exclusive contracts will generally lead to efficient outcomes: if exclusivity is efficient, then exclusivity will be chosen.[12] Otherwise common contracting is chosen.[13]

Anticompetitive effects through exclusive dealing can only occur when common contracting is efficient, but exclusivity today will create future market power relative to parties that are not involved when the exclusive contract is negotiated. That could be the case when browsers and device manufacturers sequentially negotiate search engine defaults with Google. A device manufacturer might want to use Bing even if it is not as efficient in advertising yet, because it anticipates more competition in the future if it gives Bing greater learning experience. In those circumstances Google may want to maintain a low-quality Bing to have more bargaining power with the next device manufacturer and pay the first device manufacturer a share in the future monopoly rent achieved by keeping Bing out.

However, this argument does not take into account the likely counterfactual. The argument is only credible if, for example, placing Google as a default could deny substantial search traffic to other search engines. However, the court has assembled broad evidence from experiments on whether users switch back to Google after a default switch to another search engine. For example, Mozilla's Firefox Browser switched the default from Google as its default search engine to Yahoo and later back to Google. The first switch did not prevent the vast majority of Google users from switching back to a Google default for their searches. While Google's share of queries was reduced from 80%-90% to 60%-70%, it is clear that only 20% of queries were affected by the default choice of the browser. The users behind these 20% are precisely those users that do not care very much about their search experience. That is also shown through the evidence that what Google lost, Yahoo gained and that the Google share returned to 80-90% when Mozilla switched back to Google. The judgment also contained some evidence that non-switching users tended to be less intense users of search engines and therefore contribute less to learning.

This means that the foreclosure theory of harm based on payments of default exclusivity critically depends on whether a relatively small gain in search query share can have a sufficiently large effect on Bing reaching a minimum efficient scale. Our analysis on market definition has also shown that the observation of exclusivity and a payment from the Google search engine to Mozilla cannot in itself be an indication of anticompetitive behaviour even for a dominant search engine.

It therefore seems impossible to decide whether foreclosure effects from the default contracts are likely without assessing the size of the payment and the impact a relatively small shift in search query share would have had on the relative quality of Bing. Unfortunately, these questions were not asked.

[12] Douglas Bernheim and Michael Whinston, 'Exclusive Dealing' (1998) 106(1) Journal of Political Economy 64-103.
[13] Supra n. 8.

4.2 Is the Payment Justified as a Dissuasion to Apple not to Develop its own Search Engine?

One possibility we have not discussed up to now is that the payment size reflects the amount of money Google needed to pay to dissuade Apple from developing its own search engine. Google may have seen the biggest threat to advertising revenues on Apple devices from Apple adopting its own search engine. Due to the high integration of Apple, there may be the possibility that this would lead to full exclusivity on the browser.

In the bilateral relationship between Google and Apple, Apple will only develop a browser, when the expected benefits of taking all future advertising to itself would outweigh the costs of developing such a browser plus the lost revenues from not receiving payments from Google as a default browser in the future. If the payment from Google is just large enough to deter such a development (or slow it down), this would be an efficient solution because other search engines either face Google as a search default on Apple or Apple would attain exclusivity. The market structure would then not become more competitive.

V. The Implications for Remedies

Any remedy discussion requires a clear finding which precise behaviour is deemed to be anticompetitive based on an assessment what behaviour would be under the counterfactual. In our view the decision is not very clear on this point. Different interpretations of what precisely is considered anticompetitive behaviour are consistent with the decision.

One interpretation is that any payment for a default position by a dominant search engine is deemed to be anticompetitive. Then the appropriate remedy would be to prohibit Google to make payments for default status. But then Bing would become the search engine with the greatest ability to pay for the default position on Apple. It has already shown that it is willing to pay for the default position and thus would always win the default. Since monetization is less effective with Bing this would be a less efficient allocation, reducing advertising effectiveness and inducing costs on users who prefer Google.

Another interpretation is that the alleged foreclosure effect is a result of the duration of the contract rather than a payment itself. As in exclusive dealing the appropriate remedy would then consist in limiting the duration of default status. This might give more incentives to experiment with other search engines like Bing, give more learning opportunities to these search engines, and encourage investments by competitors.

The fundamental problem for the remedies phase of the proceedings in light of our analysis is that it is not clear what precisely the anticompetitive behaviour is supposed to be: making any payments for defaults, payments for defaults that are too high, or the length of the default contracts. There are also no possibilities of removing the incentives for default choices by separating the search engine from the advertising business. In that case there is no incentive to innovate on the search

engine, because these innovations cannot be monetized. Forcing the change of the monetization model will lead to very low willingness to pay for the search engines from end users who will continue to have free access to search on other search engines. This means that the advertising financed search engine business model will outcompete any Google browser that cannot be financed through advertising at best returning to the previous industry structure. Such a remedy would potentially reduce competition and reduce search engine quality.

However, all of these approaches avoid the central question: Is market concentration driven by anticompetitive behaviour or competitive market dynamics. The economic literature on innovation shows that dominant firms, like Google, have greater incentives to invest in quality improvements, reinforcing their position.[14] The reason is that the market leader has a quasi-monopoly position to lose but the challenger only a duopoly profit to gain. Since monopoly profits exceed total profits in a duopoly, the leader has greater incentives to invest in innovation. This leads to persistent monopoly positions without the leading firm having to resort to anticompetitive practices.[15]

To the extent that there is a problem with market power in this market, it is then a structural problem and not a problem of anticompetitive behaviour. That is the reason why sometimes drastic remedies are proposed like structural separation, in analogy to the breakups of Standard Oil and AT&T. But a separation of the advertising business from search engines would effectively make it impossible to optimally monetize search, which is likely to harm innovation in search engine improvements and eventually customers. It is also questionable whether any type of breakup could address the foreclosure claim in the decision, i.e. it would not be clear which illegal behaviour would be remedied.

VI. Conclusion

While Google's agreements with device manufacturers and browsers may raise legitimate concerns about market foreclosure, our analysis shows that this intuition is anything but clearcut.

The analysis makes clear that we should expect markets for exclusive default placement of search engines to develop to allocate such defaults efficiently. This will lead to considerable payments to browsers or device manufacturers for these default slots. Any behaviour must also be assessed based on the counterfactual that denying one browser the default slot leads to another browser gaining it. The decision has not clarified what specific behaviour can be considered as distorting competition for these slots. But without such clarity it is neither possible to assess whether there was anticompetitive behaviour nor to design remedies that would improve competition.

[14] Richard J Gilbert and David MG Newbery, 'Preemptive Patenting and the Persistence of Monopoly' (1982) The American Economic Review 514; Christopher Harris and John Vickers, 'Patent Races and the Persistence of Monopoly' (1985) 33(4) The Journal of Industrial Economics 461.

[15] Supra note 12