

Antitrust Chronicle

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MULTI-SIDED MARKETS & CONSUMER HARM

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LETTER FROM THE EDITOR

Dear Readers,

To close out this consequential year in antitrust, the December 2018 CPI Antitrust Chronicle features articles related to multi-sided platforms and consumer harm. As the legal and economic literature have parsed out over the years, multisided markets have been around and long time, but today they have taken on a rather ubiquitous nature.

A number of the articles in this month's Chronicle feature discussions on some of the pertinent issues of the European Commission's recent *Google Android* decision... discussing, among other issues, relevant markets, competitive constraints, underlying damage theory, the potential effects of associated remedies, and potential consumer harm.

Looking beyond this specific case, one author asks: "Has the digital economy turned into a jungle?" This month's articles address some of the broader themes and issues that continue to be hotly debated in relation to antitrust enforcement of two-sided and multi-sided markets. When faced with these new (and some not so new) hurdles, what are some of the main challenges to ensure the relevance and timeliness of competition enforcement?

As 2018 comes to a close the team at CPI wishes our readers, authors, and subscribers happy holidays and a great start to the New Year.

As always, thank you to our great panel of authors.

Sincerely,

CPI Team¹

¹ CPI thanks CCIA for their sponsorship of this issue of the Antitrust Chronicle. Sponsoring an issue of the Chronicle entails the suggestion of a specific topic or theme for discussion in a given publication. CPI determines whether the suggestion merits a dedicated conversation, as is the case with the current issue of the Chronicle. As always, CPI takes steps to ensure that the viewpoints relevant to a balanced debate are invited to participate and that the quality of our content maintains our high standards.

SUMMARIES

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Google Android Antitrust: Dominance Pivots and a Business Model Clash in Brussels

By Randal Picker

The European Commission's recent action against Google regarding the licensing terms for Android appears to undervalue results of the business model competition that has taken place in smartphone operating systems. Apple, Microsoft, and Google entered the smartphone market with different approaches: Apple vertically integrated software and hardware; Google went two-sided; and Microsoft offered fee licenses. Two of those approaches have succeeded and one has failed, but the great irony of the situation is that now that consumers have spoken, the EC seems to be pushing Google to undertake a dominance pivot and to switch to a business model that consumers rejected.

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The European Commission's *Android* Decision and Broader Lessons for Article 102 Enforcement

By Nicholas Banasevic

Against the backdrop of the ongoing debate about the appropriate role for competition policy in hi-tech markets and the suitability of its analytical tools, this article examines some of the key findings of the European Commission's July 2018 *Android* Decision. While it is important to delineate between what issues should be dealt with by competition law and what might be for other areas of policy, the Decision illustrates that the tools of competition law are sufficiently flexible to be able to analyse conduct in hi-tech markets in a meaningful way.

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A Preliminary Assessment of the European Commission's *Google Android* Decision

By Pinar Akman

This article offers a preliminary overview of some of the pertinent aspects of the European Commission's *Google Android* decision. It discusses the definition of the relevant market and competitive constraints in the case, including the potential constraint from Apple. It also offers thoughts on the theory of harm in the case and suggests that *Google Android* may be better perceived as a case concerning refusal to deal than tying. Finally, the article discusses some of the implications of the decision and notes the growing importance of objective, commercial justifications in the context of technology markets where services are monetized in very different ways by different providers.

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***Google Android*: Record-Breaking Fine on Anti-Competitive Practices Under Article 102 TFEU**

By Anca D. Chirita

Commentators have been waiting for the *Google II* decision since mid-summer. The present contribution is based solely on the revelations in the European Commission's press release. It concerns the anti-competitive tying, the exclusivity requirements, the market-foreclosure test, and consumer harm, as evidenced by unconscious bias and the lock-in effect, as well as the limited scope for an efficiency defense under Article 102 TFEU. With this decision, the Commission does not create a new precedent, but adds to its existing decisions on anti-competitive tying and exclusivity payments. If there is anything unprecedented, it is the level of the fine imposed on Google.

SUMMARIES

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Assessing the Impact of Vertical Integration in Platform Markets

By Jerome Pouyet & Thomas Trégouët

We analyze a vertical merger between a platform providing an operating system and a device manufacturer in the presence of indirect network effects between buyers of devices and developers of applications. Indirect network effects generate a form of demand complementarity at the manufacturer level. Vertical integration creates market power over nonintegrated manufacturers and application developers. It also allows the integrated firm to coordinate the pricing decisions across both sides of the market, thereby leading to a better internalization of network effects. The impact on competition depends on the strength and the structure of indirect network effects. Our analysis shows that indirect network effects qualitatively change the traditional competitive analysis of vertical integration in platform markets.

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Amazon and the Law of the Jungle

By Simonetta Vezzoso

Has the digital economy turned into a jungle? And in case it has, what type of jungle is it and shall we do anything about it? These and related questions are currently discussed in several distinguished fora. In the EU and elsewhere, competition authorities have also stepped up enforcement in the tech sector. The broad range and sophistication of anticompetitive strategies that Big Tech firms deploy are challenging competition authorities to make extensive use of their powers, available tools and other resources. This is clearly illustrated by the investigations into Amazon's practices presently conducted by the European Commission and the Bundeskartellamt.

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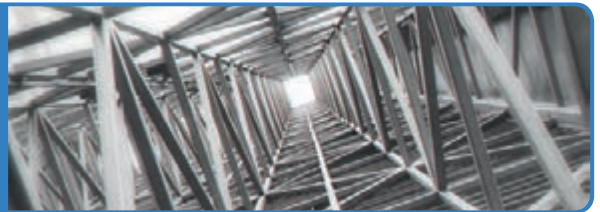


With Uncertain Damage Theory Come Unpredictable Effects of Remedies: “*Libres Propos*” on The *Android* Case

By Frédéric Marty & Julien Pillot

This contribution analyzes the EU Commission's *Google Android* decision of July 18, 2018. We question both the underlying damage theory and the potential effects of associated remedies. We investigate their impact on Android's two-sided structure. These remedies question both Google's business model and Android's technical architecture as anti-fragmentation provisions and apps' pre-installation may be consequential to such a two-sided structure.

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Structuralist Innovation: A Shaky Legal Presumption in Need of an Overhaul

By Dirk Auer

The relationship between competition and innovation has puzzled economists for the last century. This had led to a growing body of work which ultimately concludes that no market structure is strictly superior at fostering innovation. Despite these findings, the European Commission has recently adopted a number of decisions – including the two *Google* cases – wherein it concludes that more firms in any given market will produce greater choice and more innovation for consumers. I call this the “Structuralist Innovation Presumption.” This paper shows that the Commission's presumption is at odds with sound economics and that a more nuanced approach is required.

WHAT'S NEXT?

Starting in January 2019 CPI will be publishing two Chronicles each month. For January 2019, we will feature Chronicles focused on issues related to (1) **Behavioral Economics**; and (2) **Leniency**.

ANNOUNCEMENTS

CPI wants to hear from our subscribers. In 2019, we will be reaching out to members of our community for your feedback and ideas. Let us know what you want (or don't want) to see, at: antitrustchronicle@competitionpolicyinternational.com.

CPI ANTITRUST CHRONICLES FEBRUARY 2019

For February 2019, we will feature Chronicles focused on issues related to (1) **Private Enforcement**; and (2) **Data Protection**.

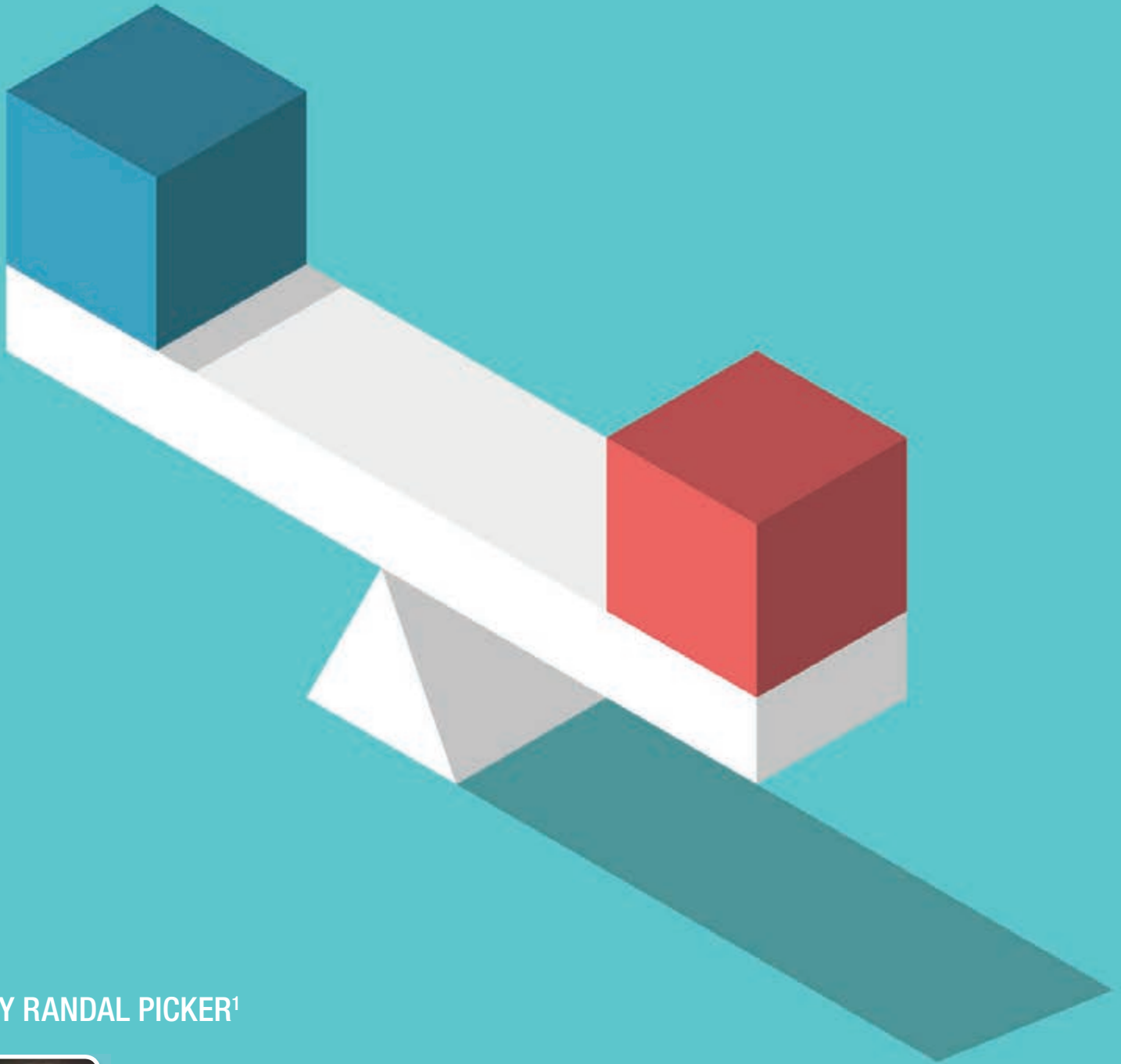
Contributions to the Antitrust Chronicle are about 2,500 – 4,000 words long. They should be lightly cited and not be written as long law-review articles with many in-depth footnotes. As with all CPI publications, articles for the CPI Antitrust Chronicle should be written clearly and with the reader always in mind.

Interested authors should send their contributions to Sam Sadden (ssadden@competitionpolicyinternational.com) with the subject line "Antitrust Chronicle," a short bio and picture(s) of the author(s).

The CPI Editorial Team will evaluate all submissions and will publish the best papers. Authors can submit papers on any topic related to competition and regulation, however, priority will be given to articles addressing the abovementioned topics. Co-authors are always welcome.



GOOGLE ANDROID ANTITRUST: DOMINANCE PIVOTS AND A BUSINESS MODEL CLASH IN BRUSSELS



BY RANDAL PICKER¹



¹ James Parker Hall Distinguished Service Professor of Law, The University of Chicago Law School.

I. INTRODUCTION

On July 18, 2018, the European Commission announced a new €4.34 billion fine over Android and ordered Google to change how it licenses Android software.² This is the second Commission fine for Google in roughly a year — the other was over Google’s comparison shopping service and that fine was €2.42 billion.³ You can connect those two points with a line and Google can’t like what that looks like.

This is an exercise in platform engineering by European antitrust authorities. The new decision makes a statement about acceptable entry paths for firms dominant in one market by demanding that a successful firm pivot away from the practices that consumers have found valuable and that indeed led in the first place to the emergence of dominance in the new second market. Call this a “dominance pivot.” Yes, consumers like your product and indeed preferred it over the competition, now change that product to make it look much more like the product that consumers have already rejected.

Google offered a new business model for operating system software for mobile devices and the Commission didn’t like the way it might extend Google’s dominant position in desktop search into mobile. There is an element of truth there, but in requiring a dominance pivot, the Commission appears to undervalue the virtues of business model competition at least based on what we have seen from the choices that consumers actually made.

II. A SHORT HISTORY OF THE EC’S PURSUIT OF GOOGLE

It is worth retracing briefly what has happened here. On November 30, 2010, the Commission announced that it had opened an antitrust investigation to assess whether Google was abusing a dominant position in online search. In its press release, the Commission set out quickly how Google worked — organic search results matched with advertisements above and to the right of those — and that it was receiving complaints by Google competitors that it was favoring its own services compared with those of its competitors.⁴

On May 21, 2012, then DG Competition head Joaquin Almunia gave a speech in which he offered an update and said that the pending investigation was focusing on the concern that Google was preferring its own vertical search services against those of competitors like Yelp.⁵ In that framing, Google’s core business was organic horizontal search results that were matched with ads paid for by third parties. This of course is the classic business model of media markets offering consumers content, sometimes for a fee, sometimes for free, and charging advertisers to reach those consumers. An eyeballs business.

So-called vertical search competitors had entered to offer specialized search results. In many cases, this wasn’t just about organizing Web content in a different or more selected way but instead about building business models that produced new content. Google’s original business was one of copying websites, building an index, and figuring out how to rank webpages in response to search queries, but it wasn’t actually creating new content and instead was just offering a path through the internet. Yelp and other vertical sites pushed consumers to create new information rather than just relying on preexisting information available somewhere on the internet.

But the original case would narrow to a fight over comparison shopping services and after a series of proposed settlements by Google, on April 15, 2015, the Commission sent a statement of objections to Google regarding comparison shopping and also announced that it had opened a separate investigation into Google’s licensing practices for Android.⁶ On June 6, 2017, the Commission announced that it had fined Google €2.42 billion for abusing its dominant position in search and ordered Google to fix the underlying competition problem by applying to Google’s own comparison shopping service the same rules it applied to third-party comparison shopping services.

2 European Commission, Antitrust: Commission fines Google €4.34 billion for illegal practices regarding Android mobile devices to strengthen dominance of Google’s search engine, July 18, 2018 (online at http://europa.eu/rapid/press-release_IP-18-4581_en.htm).

3 European Commission, Antitrust: Commission fines Google €2.42 billion for abusing dominance as search engine by giving illegal advantage to own comparison shopping service, June 27, 2017 (online at http://europa.eu/rapid/press-release_IP-17-1784_en.htm).

4 European Commission, Antitrust: Commission probes allegations of antitrust violations by Google, November 30, 2010 (online at http://europa.eu/rapid/press-release_IP-10-1624_en.htm?locale=en).

5 Joaquin Almunia, Vice President of the European Commission, Competition Policy, Statement of VP Almunia on the Google antitrust investigation, May 21, 2012 (online at http://europa.eu/rapid/press-release_SPEECH-12-372_en.htm).

6 European Commission, Antitrust: Commission sends Statement of Objections to Google on comparison shopping service; opens separate formal investigation on Android, April 15, 2015 (online at http://europa.eu/rapid/press-release_IP-15-4780_en.htm).

It would take the Commission the better part of another six months to release the actual decision — it arrived on December 18, 2017, just in time for Christmas — and the released decision was heavily redacted and therefore ideal for readers who found it really valuable to read bits and pieces of economic and legal reasoning largely shorn of the factual basis for the conclusions.

Google moved to implement that remedy by providing that other firms would have a chance to bid in auctions to run the comparison shopping advertisements. That was a natural response to the Commission's call for neutrality between Google's shopping service and those of its competitors. After all, as the Commission made clear in its original November 2010 press release, the top space on a Google search result has typically been filled with advertising. That is where Google has made money for returning the organic search results down the page. It is hard to imagine that Google's competitors would get free access to Google's advertising slots, though in a letter dated November 22, 2018 directed to Commissioner Margrethe Vestager that seems to be exactly what they are seeking.⁷ Google has appealed the Commission's decision. And press reports in mid-November 2018 indicated that the Commission was perhaps nearing the end of a third investigation of Google relating to its rules regarding Google AdSense.

III. GOOGLE'S LICENSING OF ANDROID

Eight years in, Google now faces three fronts in Europe. It has appealed the July 2018 Android ruling, though for the public that ruling still sits in limbo as no public version of the decision has yet been issued. The press release and related speeches are all we have to go on at this point.

In the Android case, the Commission found that Google had impermissibly tied its Google Play store to the Google search app and to its Chrome browser. Android is a mix of open-source software and proprietary software owned by Google. That means that parts of the Android software are available for use by anyone and a firm could produce its own version — or flavor if you like — of Android, but other parts are controlled by Google.

The Google Play store belongs to Google and the Commission concluded that it had become dominant among competing Android stores. The EC doesn't bar dominance as such, but a dominant firm is barred from abusing that position and the EC tries to police that line actively. The Commission found that Google insisted that Android handset makers pre-install the Google Search app and Chrome in order to get Google Play. That might not matter really if Google Play were just one choice among Android app stores, but handset makers wanted Google Play given its strong position in the Android store market. Insisting that handset firms take the Google Search App and Chrome with Google Play seems like a straightforward example of tying and that was what the EC found problematic.

Second, the Commission found that Google had made payments to device manufacturers and mobile network operators to preinstall Google search as their exclusive search app across all of their Android devices. And third, handset manufacturers who wanted to install Google Play and Google search had to agree that they would not develop devices running an Android fork. That is not an Internet of Things eating utensil but rather a competing flavor of Android. The open source parts of Android are available to be used by others to produce their own operating systems and a fork does just that. That is not a purely hypothetical notion as Amazon built an Android fork, as Commissioner Vestager noted in her statement announcing the EC's Android fine.

I am going to focus my attention here on the tying claim. Exclusive dealing is an old idea in antitrust. It can have virtues or vices, and I don't think that I have something new to say about it here, though one could easily imagine why a firm with Google's market share should be especially cautious, as a matter of practical antitrust, in negotiating for exclusive arrangements. And the same might be said for the anti-forking or anti-fragmentation clause. That clause seemed to limit the number of potential competitors in possible versions of the Android operating system. Antitrust officials aren't likely to respond well to that type of clause even if it is true that forking — or fragmentation — matters in how Android competes with iOS.

⁷ Letter of November 22, 2018 to Commission Vestager (online at http://www.foundem.co.uk/Comparison_Shopping_Open_Letter_Commissioner_Vestager_Nov_2018.pdf).

IV. BUSINESS MODEL COMPETITION IN SMARTPHONE OPERATING SYSTEMS

Focus instead on the tying claim and start with a little history. In mid-2005, Google acquired Android with the vision of launching a new software ecosystem for smartphones. In 2007, based on worldwide sales, Nokia's Symbian operating system had 63.5 percent of the market; Microsoft Windows Mobile, 12 percent; and RIM's Blackberry, 9.6 percent.⁸ Apple introduced the iPhone in January 2007 to rave reviews but you couldn't buy it until later that year.

Both Microsoft and Google faced competitive challenges as the new smartphones threatened to diminish the importance of personal computers. Microsoft had dominated the market for PC operating systems but it had not done that with smartphones. Google had dominated the PC Internet search market, but would that position be at risk if everyone switched to smartphones?

Android was Google's response to the new competitive threat. Google had zero experience in smartphones and there is no obvious reason that it would achieve success in this new market. But by 2018, Android would come to hold roughly 80 percent of the market worldwide with most of the rest belonging to Apple. Microsoft, Nokia and RIM have basically vanished.

Google's plan when it launched Android was to build a new software ecosystem around it and to give away Android for free. Google helped to form the Open Handset Alliance, initially a group of 34 handset manufacturers, phone system operators and others to jumpstart development around Android.

But how would Google make money from Android? Microsoft charged users or PC makers for MS-DOS and Windows and that was the plan for smartphones as well. Apple sold the iPhone and iOS came bundled with it. The app store for the iPhone didn't come until July 2008. Google was entering a new market, a market that Google believed could be disruptive of its position in search. It could charge a fee to license Android but that would almost certainly have reduced the uptake of Android as Microsoft was playing exactly the same strategy and was ahead.

Google undoubtedly wanted to support Android through its advertising business as that was its great competitive advantage. Embedding Google search in Android is the natural way to do that. It meant that Android would come with a third-party payment mechanism built in and it meant that the price of Android handsets would presumably be lower given that the Android software itself would be free.

This is really the point of business model competition. Apple was being Apple: vertically-integrated hardware and software. Did that with the Macintosh, did that with the iPhone. Microsoft was being Microsoft: it had dominated the OS market for the open IBM PC architecture and it hoped to do exactly that for mobile phones. There would be lots of handset makers, just as there were PC makers and Microsoft would make money off of phone OSs. Google was offering a different business model: lots of handset makers and advertising-supported software. This is very much a two-sided markets approach, though again one that looks very much like that used by traditional media companies. The competition between Microsoft and Google was precisely over which way of paying for phone OS software would win.

V. THE DOMINANCE PIVOT

Did the European Commission really want to force Google to enter the mobile OS software market by insisting that Google charge a cash fee for that software? That would have restricted the business model competition in mobile operating systems and would have forced Google to adopt a business model that consumers rejected when offered a choice of the Microsoft approach to mobile OSs.

The reasoning here would be that the EC could have thought that it was sensible to block competitive choices in mobile OSs if that somehow limited Google's ability to extend its position in desktop search into mobile. Sacrifice competition in one market to benefit competition in a second market. That approach isn't unthinkable, though it would seem to require an exquisite sense of knowing what was going to happen in the mobile OS competition.

But the EC didn't do that. Instead, the takeaway at this point — and recall that like the rest of the public, I haven't actually read the actual case analysis yet — is the EC thought that Google's initial entry choice in mobile OSs was acceptable and instead the problem was that Google didn't switch its original business model at the point that Google Play became dominant. That is what I am calling a dominance pivot, a demand that a dominant firm switch strategies at the point that they achieve dominance.

⁸ Gartner Says Worldwide Smartphone Sales Reached Its Lowest Growth Rate With 3.7 Per Cent Increase in Fourth Quarter of 2008, March 11, 2009 (online at <https://www.gartner.com/newsroom/id/910112>).

Switch to what? Switch presumably to the business model that consumers had rejected when they chose Android over Microsoft and also over Apple. As that sentence suggests, there are many moving pieces here. Apple has almost always had elegant hardware and software, but it was expensive. Microsoft has always charged for software. Google's vision for Android was a phone that was, at least in part, advertising supported. Different consumers presumably would make the choice that worked best for them, and it was in that framework that the original business model for Android succeeded.

Notwithstanding the wonder of the internet with instantly downloadable software, the behavior of the best situated people in the mobile OS industry suggests that pre-installation of software matters. Google pays Apple *billions* of dollars to get its software pre-installed on iPhones. If default settings didn't matter, Google would keep all of that money in Mountain View instead of shipping it by the truckload to Cupertino. The internet isn't slow but human beings are slow to make change and that makes default starting positions valuable and sticky. And the Commission itself noted in its press release that 75 percent of search queries on Windows Mobile devices are made using Bing. (One of course could imagine that the universe of Windows Mobile users might be restricted to people living in Redmond, WA, so this presumably is very much a self-selected group of users.)

If the EC forced Google to walk away from its original business model for mobile based on tying and instead switch to a framework in which Google would now have to buy carriage of its search products from Android handset makers just like it does from Apple, that would almost certainly change the economics of Android for Google. As I suggested in a blog post after the fine was announced, the natural response for Google would be to charge for Google Play to rebalance the funds flows of Android software. And of course, Google has announced that it plans to do just that.

VI. WHAT IS AT STAKE HERE?

I don't think that the Android case is really about the distribution of Google search on mobile devices or Google's eventual market position there. Had Google been blocked from tying search to Google Play, I think that there is every reason to think that Google search products would have been the default install on most Android handsets. Why? For the same reason that DuckDuckGo is not the default search engine on Apple's iOS. Google has no mechanism to force Apple to preinstall Google apps and services. Apple effectively auctions off distribution and Google wins those auctions because it does the best job of monetizing search.

The difference then isn't whether Google apps and services would have ended up on Android handsets. The difference is in how we organize the cash flows and the type of mobile OS competition that would have taken place. Google may well have had to buy distribution of its search app. While the European Commission seems to believe that Google has done just fine with just the revenues from the Google Play store, I have no idea whether that is right but there certainly was little reason to believe that upfront when it launched Android.

That suggests that the natural alternative for Google if it was going to have to buy distribution on Android handsets was full-blown vertical integration *à la* Apple or to charge a licensing fee for the Android software *à la* Microsoft. Vertical integration might have reduced handset competition — there are no competing iOS handsets — but even if not — if the alternative to iOS were again an “openish” IBM PC style platform — there still would have been the upfront licensing fees for the mobile OS software.

What the Commission seems to want is to force Google to buy distribution for search as it does on iOS and to charge a cash fee for Android. I understand why the Commission is concerned about Google extending its desktop position on search into mobile, but, as I have suggested, I think that was going to happen one way or the other. I don't think that the Commission can change that without more direct intervention.

But the real question is why would the Commission want to restrict competition to cash payments for mobile OSs? I get why Microsoft would want that, as they don't run an advertising-based business model. But consumers were actually presented with the choice of a fee-based OS handset — Windows mobile — and Android and obviously chose the latter.

Condemning the original Google business model here would be a mistake for the reasons already suggested. And forcing a business model pivot at this point will lead to lots of euros moving around — Google buying distribution and handset makers paying to license Android — without, at this point, any obvious change in actual competition or even here the net flow of funds between Google and handset makers. We've seen lots of empty remedies in antitrust — Microsoft MS-DOS in the U.S. in 1994, Windows Media Player in Europe in 2004 and the browser choice screen in Europe in 2009 — and the natural question is why this won't just be more of the same?

THE EUROPEAN COMMISSION'S *ANDROID* DECISION AND BROADER LESSONS FOR ARTICLE 102 ENFORCEMENT

BY NICHOLAS BANASEVIC¹



¹ Head of Unit, Antitrust: IT, Internet and Consumer Electronics, DG Competition, European Commission. The views expressed in this article are the personal views of the author and do not necessarily represent the position of the European Commission. I am grateful for their comments and inputs to Guillaume Lorient, Brice Allibert, Max Kadar, Andrea Amelio, and Anthony Dawes.

I. INTRODUCTION

The aim of this article is to analyze some of the main issues that arose in the European Commission's recently adopted *Google Android* Decision and to then place these in the context of a number of broader themes that continue to be hotly debated in relation to antitrust enforcement in hi-tech markets.

II. THE DECISION

A. *The Importance of Search*

The core theme of the Decision is that the different abuses all had the same aim of cementing Google's dominance in search in the mobile space. This element is of key importance. Google already had a search monopoly on desktop when mobile internet emerged in 2007. With the rapid growth of mobile internet traffic meaning that there was a new, commercially important channel where search would take place, Google saw both an opportunity and a threat to which it needed to respond. Against this backdrop, the Decision is about how Google used Android as a vehicle to extend and protect its search dominance in the mobile space (and therefore its main source of revenue, which comes from search advertising).

Android is an open-source smart mobile operating system. Google bought it in 2005 and continued to develop it thereafter under the open-source license, meaning that anyone could copy, modify, or distribute the code to create a different version of Android – a so-called “*Android fork*.” Google started providing the core version of Android commercially to smartphone and tablet manufacturers (“OEMs”) for free, but included a range of contractual requirements relating to the terms for obtaining Google's associated proprietary apps (e.g. Google's search app) and services. The free and open-source provision of Android was a key part of getting all major OEMs signed up, which led (by 2011) to Google having a dominant position with Android, the associated app store (Play Store), as well as of course in search. The case is about the harmful effects that the different commercial restrictions had on competition once Google was dominant. Contrary to the impression that some seek to paint, it does not call into question Android as such or the open-source model.

B. *Market Definition and Dominance*

A word first about market definition and dominance. Google has focused a lot of attention on the argument that in finding both Android and the Play Store dominant, the Commission ignored the commercial constraint coming from Apple – indeed, a look at some commentaries could lead to the belief that the Commission had not looked at this issue at all. The reality is different.

As a first step, the Decision defines various markets in the standard way, including upstream markets for smart licensable operating systems and Android app stores. The findings in this regard are the same in the sense that these products are provided to OEMs in an upstream market where Apple is simply not present, since iOS and the Apple App Store are not provided commercially by Apple to OEMs. That is not to say that there is no competition between Android devices and Apple devices downstream, but that is an indirect constraint that must be analyzed in the context of the assessment of Google's dominance.²

Against the backdrop of Google's 90 percent-plus market shares and the high barriers to entry in the two upstream markets, the Decision examines in detail the extent to which the downstream device competition, or to be more precise, the possibility of switching from Android devices to Apple devices, is sufficient to constrain Google's dominance upstream. It finds on the basis of a range of factors that it is not, including the fact that: (1) an operating system is only one component among others of a smart mobile device, meaning that it is only a limited, indirect factor that is taken into account by users when considering devices; (2) empirically, there is limited switching between Android and Apple devices, not least due to consumer switching costs; and (3) Apple devices are not present on the mid to low end of the downstream device market.

The Decision's overall conclusion is therefore that both Android and the Play Store are dominant products, and indeed that the Play Store in particular is a must-have product for OEMs, since consumers expect to buy smart mobile devices with an app store pre-installed.

² A similar type of analysis was carried out in the context of the European Commission's *Qualcomm (Exclusivity payments)* case as well as in the U.S. Department of Justice *Microsoft* antitrust case.

C. The Abuses

The abuses that the Decision concludes took place were the following:

- Tying of the Google Search app to the Play Store
- Tying of Google Chrome to the Play Store and Google Search
- Payments conditional on exclusive pre-installation of Google Search
- Restrictions on OEMs selling Android forks (so called “anti-fragmentation” obligations)

1. Tying

The legal framework applied to the two tying abuses is the standard one from *Hilti*, *Tetra Pak II*, and *Microsoft*. The relevant criteria are that: (1) there is dominance in the tying product; (2) the tying and tied products are separate; (3) the tying product cannot be obtained without the tied product; and (4) there is harm to competition.

The Decision’s conclusion that there was harm to competition is in part founded on the fact that there was a significant pre-installation advantage that Google Search and Google Chrome obtained as a result of being pre-installed on virtually all Android devices through the tie. This is not a theoretical proposition but an empirical one for the products concerned.

Google argued that the fact that consumers can easily and do in practice download alternative apps meant that there could be no foreclosure and pointed to the downloads of billions of apps as supposed proof. However, Google’s figures related to all apps, and did not focus on the two products concerned – search and browser. For these products, the figures show that downloads are limited and that on devices where Google was not pre-installed (e.g. Windows smartphones), the use of Google search was significantly lower than on Android devices. Market share developments in the two products were fully consistent with the finding that pre-installation mattered, with Google Search maintaining very high market shares and Chrome growing rapidly, with the growth rates higher on mobile devices than on desktop, where Chrome was of course not pre-installed because of any tie by Google.

One argument that Google brought in relation to this point was that any superior market performance from Google’s products was due to their superior quality and consumers’ preferences (Google made this claim for the other abuses as well). It is a familiar refrain from companies that have abused their dominance that their products are better than those of their rivals and so would have won out anyway – this begs the question of if this were indeed the case, why the need for the restriction in the first place?

In terms of claimed efficiencies, Google argued that Android had brought significant benefits to the mobile ecosystem by providing the market with a free and popular product that was the only effective counterweight to Apple, and that the ties of Search and Chrome were indispensable for Android to be brought to market. Google’s claim essentially amounted to arguing that the tie was indispensable for Android and the Play Store to be provided at all – i.e. that the only way that it could be provided was if search (advertising) revenues could be guaranteed through search and browser tying. As a general proposition, it is very difficult to envisage that the least restrictive way that Google could obtain search revenues on mobile was through tying.

In terms of the legal framework, Google argued that by focusing only on one side of the market (i.e. harm to competition in search and browser via the tie), the Commission was ignoring the broader benefits on the other side(s) of the market (operating systems and app stores). This has echoes of arguments that have been made in the U.S. in the *American Express* case. Under EU competition law, the legal framework is clear and while it allows for the assessment of any benefits that would arise from the conduct, there should first be an analysis of any harm to competition in the market concerned arising from the specific conduct at stake (tying). Then, as part of the objective justification analysis, there should be an assessment of whether the specific restrictions concerned are indispensable to achieve any benefit. In this case, that means that it was for Google to demonstrate that the least restrictive way of monetizing Android was by tying search and browser, which is a more targeted question than the more general claims that Google was making about the overall benefits of Android.³

³ In this respect, arguments both before and after the Decision that the Commission should “define the counterfactual” are somewhat misguided. The Commission did assess the counterfactual by demonstrating the competition that the tie was capable of preventing, but once it has done this and addressed any arguments that the specific clauses in question were indispensable to achieve a claimed efficiency, it is not for the Commission to speculate in very general terms what the state of the world could have otherwise been.

Google did not succeed on this point. It did not provide any specific contemporaneous evidence in relation to the need for the specific tying restrictions and indeed, the Decision found that there were a number of other ways that Google was able to monetize the Android ecosystem. In particular, Google obtains billions of dollars in annual revenues through sales of apps on the Play Store (free provision of an app store and monetization through sales of apps is also the business model of other app stores) and it also obtains significant value through the Android ecosystem via the gathering and subsequent monetization of data – in other words, the argument that the tie is necessary in order to be able to invest in and develop the Android ecosystem is not borne out by the facts.

2. Payments conditional on exclusivity

The abuse relating to revenue share payments conditional on exclusivity is closely linked to the tying abuse in the sense that while the tying was about ensuring pre-installation of Google Search and Chrome, this conduct was about ensuring *exclusive* pre-installation of Google Search. As the conduct relates to payments (of a share of search advertising revenues) conditional on exclusivity, the legal framework is based *inter alia* on that of the ECJ's 2017 *Intel* judgment. While there remains a starting presumption that such conduct is abusive, the Decision analyzed in detail its harmful effects (where Google had raised arguments that its conduct was not capable of having anti-competitive effects).

As was the case with January 2018's *Qualcomm* Decision, the *Android* Decision is a further illustration that there is no hierarchy in relation to the elements needed to demonstrate such effects – the *Android* Decision examined *inter alia* the nature and operation of the payments, their market coverage, and contemporaneous evidence from the market which clearly indicated that pre-installing a rival search engine on even one device meant the loss of the Google revenue share across the whole portfolio of an OEM's devices, and that this was a clear disincentive to pre-install rivals.

In addition, the Decision contained a quantitative as-efficient-competitor type analysis which looked at how much a rival search engine with the same revenue per search and cost parameters as Google would have had to compensate a device manufacturer or mobile network operator for the loss of the revenue share payments from Google and still make profits. Based on an analysis of what share of searches would be contestable across the portfolio of devices, the Decision found that a rival would have been unable to offer such compensation and still make profits.

3. Prohibition on OEMs selling Android forks (anti-fragmentation)

The Decision's foreclosure analysis in relation to the anti-fragmentation abuse is conceptually straightforward. As a condition of taking the Play Store, OEMs were contractually prohibited from developing or selling even a single device running on an Android fork. Such forks were a credible competitive threat to Google's Android and the restriction covered virtually the whole market. There was therefore direct foreclosure of rival open source operating systems – one illustration of this was the fact that a number of large manufacturers had been prevented from developing and selling devices based on Amazon's Android fork ("Fire OS").

Most of Google's arguments related to the objective justification for the anti-fragmentation clauses. Google's claims essentially focused on the need for a "*non-fragmented*" Android experience – it argued that only with a uniform Android experience could app developers have a predictable development platform, and that with non-compatible versions of Android, there would be a bad consumer experience since apps would crash and any such problems would be imputed to Google. Of course, one person's "*fragmentation*" is another person's "*competition*," and Google's claims from a competition standpoint are essentially tantamount to saying that there should only be one commercially successful version of Android in the market – Google's. Indeed, there is a certain irony in Android becoming commercially successful in part because of its open-source nature and Google arguing that the anti-fragmentation restrictions were necessary to minimize the negative consequences for Google resulting from greater competition from Android forks.

On the substance of Google's specific claims, Google brought no convincing evidence that any crashes would occur on devices based on Android forks (indeed, the incentives of an Android fork provider, app developers, and device manufacturers are to ensure that no such crashes occur), and even to the extent that such crashes did occur, Google had the possibility to use a variety of branding methods to ensure that consumers could differentiate between Google's Android and Android forks. It is important in this respect to remember that in terms of the remedy, the Decision does allow Google to set technical specifications for devices which pre-install Google proprietary apps, but does not allow it to prevent device manufacturers from pre-installing Android forks across their whole portfolio of devices.

4. Strategy

While each of the four conducts outlined above were found abusive in their own right, the Decision also concluded that they formed part of a single and continuous strategy with the same objective, namely to protect and strengthen Google's dominant position in search, which remains by far Google's main source of revenue (via search advertising). This is confirmed by contemporaneous evidence from Google which *inter alia* outlines that Android was viewed as a key search monetization vehicle in the mobile space, and there is a clear interplay between the four abuses.

While the tying of search and the payments conditional on exclusive pre-installation of search by definition directly relate to search, the tying of Chrome also leads to search foreclosure since a significant number of searches take place via the browser, and Google Search is the default search engine in Chrome. The anti-fragmentation abuse prevented the growth of Android forks which could have been a credible platform for other search engines. What is more, all the abuses contributed significantly to the collection of data by Google, which is a key parameter to optimize a search engine.

III. CONCLUSION

In today's rapidly evolving digital world, a key challenge for competition policy is to ensure that it remains relevant. Criticisms of competition policy nowadays come from two main, but different directions. The first is that competition policy is ill-equipped to deal with new phenomena in fast-changing hi-tech markets and hence that its tools should be changed or that other policy instruments should deal with certain issues. The second is that competition policy is too intrusive and that the market and technological change will take care of any issues, and hence that enforcement against large players in hi-tech markets will hinder them from bringing innovations to consumers.

In considering these issues, it is first important to keep in mind that competition policy is one complementary part of a broader policy toolkit. While it is designed to make markets work better and ensure that there are commercial opportunities that will bring benefits to consumers, competition enforcement cannot of course answer every problem. The first task for competition enforcers and policymakers is therefore to recognize where the boundaries of competition policy should lie and to identify what kinds of issues are for competition law to deal with and which are not – if there are general problems that can be properly identified beyond competition law, that is something to be looked at by other policy tools, such as data protection or copyright.

Once this recognition and identification have been made, the next task is to define how best to make competition intervention relevant. In this respect, I am optimistic without being complacent. Competition enforcers should always strive to improve the quality of the analytical tools and concepts that they use, but I believe that the core goals and frameworks of competition policy that have served it well for decades remain relevant today, and that the tools are flexible and can be adapted to deal with different issues and market realities.

The *Android* Decision is in my view a good example of this. While one need not slavishly adhere to precedents for the sake of them, the legal framework under which the different abuses were considered is the same as that which was used for cases in the past, while the Decision's analysis in relation to market conditions, harm to competition, and objective justification was able to effectively take into account what some call new phenomena, such as the role of data, "free" products, or the two-sidedness of markets (although many of these phenomena are not in fact so new).

In my view therefore, the main challenge to ensure the relevance and indeed timeliness of competition enforcement is to have a common-sense vision of what is required to demonstrate the capability of a specific conduct to have harmful effects. I often have the impression that certain commentaries go to great lengths in seeking to require a standard of effects which in practice means that there would never be competition intervention against dominant companies. While I believe that demonstrating the capability of a specific conduct to have harmful effects is very important, both as a legal matter but also more broadly for the legitimacy of competition policy, in order not to drift towards a situation where there is risk of under-enforcement, it is also important to ensure that such a demonstration is practical and reasonably grounded in the realities of every specific case rather than becoming too abstract and theoretical.

A PRELIMINARY ASSESSMENT OF THE EUROPEAN COMMISSION'S *GOOGLE ANDROID* DECISION

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¹ Director, Centre for Business Law and Practice, School of Law, University of Leeds, UK. This piece has not been commissioned or funded by any entity. The author has not been involved in the *Google Android* case in any capacity. In the past, the author wrote a piece on the Commission's *Google Search (Shopping)* case, "The Theory of Abuse in Google Search: A Positive and Normative Assessment under EU Competition Law," [2017] (2) *Journal of Law, Technology and Policy* 301-374 (available at <http://illinoisjltip.com/journal/wp-content/uploads/2017/12/Akman.pdf>) supported by a research grant from Google. The author would like to thank Professor Peter Whelan, Dr Konstantinos Stylianou, and Geoffrey Manne for helpful comments on an earlier version of this article. An earlier version of this article was published on the Truth on the Market Blog on July 19, 2018 under the title "Will the European Commission's Google Android Decision Benefit Consumers?." The author can be contacted at p.akman@leeds.ac.uk.

I. INTRODUCTION

The European Commission's second infringement decision against Google in roughly a year was announced in July 2018, with a record-breaking fine of \$5.1 billion in Google Android. For competition lawyers and economists, the *Google Android* decision is presumably a more conventional, and therefore a more easily comprehensible, case than the preceding decision in *Google Search (Shopping)*, a decision which the current author likened to “fitting a square peg into a round hole” in relation to its fit with the EU prohibition of an abuse of a dominant position.² In *Google Android* one can at least envisage a *potentially* robust antitrust theory of harm. If a dominant undertaking ties its products together to exclude effective competition in some of these markets or if it pays off customers to exclude access by its efficient competitors to consumers, competition law intervention may, indeed, be justified and may conform to existing case law. The central question in *Google Android* is whether on the available facts this appears to have happened. Given that there is at least a potentially robust theory of harm in *Google Android*, much depends on the intricate facts of the case. As the full decision may take months to be published, this article merely offers the author's initial thoughts on some pertinent aspects of the decision on the basis of the publicly available information.

This article will not discuss any further the eye-watering fine mentioned above (which together with the fine of \$2.7 billion in the *Google Shopping* decision from last year would – according to one estimate – suffice to fund for almost one year the additional yearly public spending necessary to eradicate *world hunger* by 2030).³ This is because the fine is assumed to have been duly calculated on the basis of the Commission's relevant Guidelines,⁴ and, from a legal and commercial point of view, the absolute size of the fine is not as important as the infringing conduct and the remedy Google will need to adopt to comply with the decision.

This article proceeds on the premise that the aim of competition law is to prevent the exclusion of competitors that are (at least) as efficient as the dominant incumbent, whose exclusion would ultimately harm consumers. At one point in time at least, this also seemed to be the guiding principle of the Commission's enforcement priorities in the area of abuse of dominance, as expressed in the Guidance on Article 102,⁵ which appears to have lost (or never gained) favor as far as the Commission's actual decisional practice is concerned.⁶

II. THE FACTS IN BRIEF

In *Google Android*, the Commission found Google to be dominant on three different relevant markets and to have engaged in three types of abusive conduct. According to the Commission, Google is dominant on the relevant markets for: (1) general internet search services; (2) licensable smart mobile operating systems; and, (3) app stores for the Android mobile operating system. The three types of conduct found abusive, as expressed by the Commission, are: (1) illegal tying of Google's search and browser apps; (2) illegal payments to device manufacturers and mobile network operators conditional on exclusive pre-installation of Google Search; and, (3) illegal obstruction of development and distribution of competing Android operating systems.

2 P. Akman, “The Theory of Abuse in Google Search: A Positive and Normative Assessment under EU Competition Law,” [2017] (2) *Journal of Law, Technology and Policy* 301, available at <http://illinoisjltip.com/journal/wp-content/uploads/2017/12/Akman.pdf>.

3 See D. Laborde et al., “Ending Hunger: What Would it Cost?,” International Institute for Sustainable Development Briefing Note, October 2016, available at <https://www.iisd.org/sites/default/files/publications/ending-hunger-what-would-it-cost.pdf>.

4 Guidelines on the method of setting fines imposed pursuant to Article 23(2)(a) of Regulation No 1/2003 [2006] OJ C 210/2.

5 Guidance on the Commission's enforcement priorities in applying Article 82 of the EC Treaty to abusive exclusionary conduct by dominant undertakings [2009] OJ C 45/7.

6 See P. Akman, “The Reform of the Application of Article 102 TFEU: Mission Accomplished?,” (2016) 81 *Antitrust Law Journal* 145 for the (lack) of use of the Guidance in decisional practice; and see P. Akman, “The European Commission's Guidance on Article 102 TFEU: From *Inferno* to *Paradiso*?,” (2010) 73(4) *Modern Law Review* 605 for an assessment of the Guidance.

III. MARKET DEFINITION AND COMPETITIVE CONSTRAINTS

The premise of the case is that Google used its dominance in the Google Play Store (which enables users to download apps onto their Android phones) to “cement Google’s dominant position in general internet search.”⁷

It is interesting that the case appears to concern a dominant undertaking leveraging its dominance from a market in which it is dominant (app stores for the Android mobile operating system) into another market in which it is *also* dominant (internet search).⁸ As far as this author is aware, most (if not all) previous cases of tying in the EU to date concerned tying where the dominant undertaking leveraged its dominance in one market to distort or eliminate competition in another, otherwise competitive market. Thus, for example, in *Microsoft* (Windows Operating System → media players), *Hilti* (patented cartridge strips → nails), and *Tetra Pak II* (packaging machines → non-aseptic cartons), the tied market was actually or potentially competitive, and this was *why* the tying was alleged to have eliminated competition on the separate market for the tied product.⁹ It will be interesting to see which case the Commission uses as precedent in its decision. The question of precedent will be returned to later.

A “tying” theory of harm would have made more sense had the Commission argued that Google Play Store is the “tying product” while the Google Search App and Chrome App were the “tied products.” This would have required the Commission to have defined separate markets for these three products, but as noted above, these do not appear to be the relevant markets as defined by the Commission.

It is also noteworthy that the Commission does not appear to have defined a separate *mobile search* market that would have been competitive *but for* Google’s alleged leveraging. The market has been defined as the *general internet search* market. So, according to the Commission, the Google Search App and Google Search engine appear to be one and the same thing, and desktop and mobile devices are equivalent (or substitutable). Finding mobile and desktop devices to be equivalent to one another may have implications for other cases including the ongoing appeal in *Google Shopping* where, for example, the Commission found that “[m]obile [apps] are not a viable alternative for replacing generic search traffic from Google’s general search results pages” for comparison shopping services.¹⁰ The argument that mobile apps and mobile traffic are fundamental aspects of the search market in *Google Android* but trivial in *Google Shopping* may not play out favorably for the Commission before the Court of Justice of the EU. These two different interpretations of the same set of facts cannot both be simultaneously correct.

Another interesting market definition point is that the Commission has found Apple not to be a competitor to Google in the relevant market defined by the Commission: the market for “licensable smart mobile operating systems.” Apple does not fall within that market *because* Apple does not license its mobile operating system to anyone: Apple’s business model itself eliminates all possibility of competition from the start and is by definition exclusive.

Although there is some internal logic in the Commission’s exclusion of Apple from the upstream market that it has defined (which relates to the licensing of Android to device manufacturers), it represents a definitional stop. Once the Commission defined the market as that of “licensable smart mobile operating systems,” it was a given that Apple was not going to be part of the same market. This is because Apple allows only itself to use its operating system on devices that only Apple itself manufactures. Real markets do not come defined, and the market definition that the Commission appears to have adopted was certainly not the only feasible market definition possible. Had the market been defined as the market for smart mobile operating systems, Apple would have been found to be part of the same market. The realistic possibility of an equally valid, alternative market definition arises out of the fact that even the Commission itself considers there to be some competition between Apple and Android devices at the level of consumers.¹¹

7 European Commission Press Release “Commission fines Google €4.34 billion for illegal practices regarding Android mobile devices to strengthen dominance of Google’s search engine,” July 18, 2018, available at http://europa.eu/rapid/press-release_IP-18-4581_en.htm.

8 This point would be valid if the theory was the other way around, too. Namely, if the theory of harm was the Google was leveraging its dominance in internet search into the market for app stores for Android.

9 Case COMP/C-3/37.792 *Microsoft* (March 24, 2004) http://ec.europa.eu/competition/antitrust/cases/dec_docs/37792/37792_4177_1.pdf; Case IV/30.787 and 31.488 *Eurofix-Bauco v. Hilti* (December 22, 1987) <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A31988D0138>; Case IV/31043 *Tetra Pak II* (July 24, 1991) <https://eur-lex.europa.eu/legal-content/en/ALL/?uri=CELEX:31992D0163>.

10 Case AT.39740 *Google Search (Shopping)* (June 27, 2017) http://ec.europa.eu/competition/antitrust/cases/dec_docs/39740/39740_14996_3.pdf [568].

11 See Press Release, *supra* note 7.

The Commission does not consider the level of competition for end users (downstream) to be sufficient to constrain Google's market power for licensing of Android at the upstream, manufacturer level. The Commission reaches this conclusion mainly through an assessment of factors related to consumers' decisions in choosing an Android versus Apple device (such as price, branding, switching costs, etc.). However, all of these factors relate to, first, competition between devices, as well as between operating systems, which oversimplifies the facts of competition on the market as Google only manufactures a small fraction of Android devices whereas Apple manufactures all of Apple devices. Thus, the factors listed by the Commission which relate to a choice between an Android device and an Apple device is more complicated than presented because numerous other manufacturers with their numerous different brands, prices ranges, etc. play a role in that competition on the downstream market. In fact, the factors listed in order to establish whether Google's market power upstream is constrained by competition on the downstream market include factors that are endogenous to the players on the upstream market against whom the Commission is arguably measuring Google's market power (such as the device brand, hardware features, price range, etc.). The point is that to measure Google's market power against device manufacturers on the upstream level, one would need to consider Apple as a potential threat to Google on the *upstream* level, not on the downstream level. This requires an assessment of supply-side substitutability, not demand-side substitutability as the Commission's assessment appears to adopt. Therefore, the pertinent question is whether Apple constrains Google on the upstream, manufacturer level in that *if* Apple iOS became an alternative to Android for third-party device manufacturers, this would constrain Google's market power on the upstream level.

Although the Commission prioritizes demand-side substitutability in market definition, its own guidance on the topic notes that

[s]upply-side substitutability may also be taken into account when defining markets in those situations in which its effects are equivalent to those of demand substitution in terms of effectiveness and immediacy. This means that suppliers are able to switch production to the relevant products and market them in the short term....¹²

Apple could – presumably – rather immediately and at minimal cost produce and market a version of iOS for use on third-party device makers' devices. By the Commission's own definition, it would seem to make sense to include Apple in the relevant market. Nevertheless, it has apparently not done so here. If this is a finding based on evidence, namely that Apple could not within a reasonable time period offer a licensable version of iOS to third-party manufacturers, then the market definition may, indeed, be correct. If, however, the Commission's finding is based on a categorical rejection of Apple as a potential upstream competitor on the basis of characteristics of the downstream market (which mix factors related to consumers' purchasing decisions with factors related to manufacturers' endogenous decisions), then, conceptually, the market definition reached in the case would be problematic.¹³

IV. IS *GOOGLE ANDROID* REALLY A TYING CASE AND IS *MICROSOFT* REALLY THE RELEVANT PRECEDENT?

Given that *Google Android* appears to revolve around the idea of tying and leveraging, the EU Commission's infringement decision against Microsoft, which found an abusive tie in Microsoft's tying of Windows Operating System with Windows Media Player, appears to be the most obvious starting point in terms of the relevant precedent, at least for the tying part of the case.

There are, however, potentially important factual differences between the two cases. To take just a few examples:

- Microsoft charged for the Windows Operating System, whereas Google does not;
- Microsoft tied the setting of Windows Media Player as the default to OEMs' licensing of the operating system (Windows), whereas Google ties the pre-installation/setting of Search as the default to device makers' use of other Google apps, while allowing them to use the operating system (Android) without *any* Google apps; and
- Downloading competing media players was difficult due to download speeds and lack of user familiarity, whereas it is trivial and commonplace for users to download apps that compete with Google's.

¹² Commission Notice on the definition of relevant market for the purposes of Community competition law (97/C 372/03) [1997] OJ C372/5, [20].

¹³ See also the Commission's listing of the fact that Google Search is the default search engine on Apple devices and thus, users' switching from Android to Apple devices having a limited impact on Google's core business as a factor which shows that competition downstream does not constrain Google's market power upstream. It is difficult to comprehend what aspect of this fact relates to the potential exercise of Google's market power upstream (i.e. against the manufacturers) as opposed to relating to a possible outcome of the conduct under investigation (namely Google Search being pre-installed/default search app on the relevant device).

Moreover, there are also some conceptual hurdles in finding the conduct to be that of tying.

First, the difference between “pre-installed,” “default,” and “exclusive” clearly matters a lot in establishing whether effective competition has been foreclosed. It is one thing for a dominant undertaking to request to be the “exclusive” provider of services and pay for this exclusivity, but it is quite another thing for its services to be pre-installed without requiring exclusivity or default status if competitors’ services can also be provided alongside its own. Pre-installation without default status or exclusivity may incentivize (rather than reduce) competition if competitors can also, for example, pay device manufacturers to have their apps pre-installed on their devices. The facts relating to this part of *Android* are not clear from the publicly available information. The Commission’s Press Release notes that to *pre-install* Google Play, manufacturers have to also pre-install Google Search App and Google Chrome.¹⁴ It also states that Google Search is the default search engine on Google Chrome. The Press Release does *not* indicate that Google Search App has to be the exclusive or default search app on the relevant device. It is worth noting, however, that the Statement of Objections in *Google Android* did allege that Google violated EU competition rules by requiring Search to be installed as the default.¹⁵ We will have to await the decision itself to see if this was dropped from the case or simply not mentioned in the Press Release.

In fact, the fact that the other infringement found is that of Google’s making payments to manufacturers in return for *exclusively* pre-installing the Google Search App indirectly suggests that not every manufacturer pre-installs Google Search App as the exclusive, pre-installed search app. This means that any other search app (provider) can also (request to) be pre-installed on these devices. The same goes for the browser app.

Of course, regardless, even if the manufacturer does not pre-install competing apps, the consumer is free to download any other app – for search or browsing – as they wish, and can do so in seconds.

In short, *pre-installation* on its own does not necessarily foreclose competition, and thus may not constitute an illegal tie under EU competition law. This is particularly so when download speeds are fast (unlike the case at the time of *Microsoft*) and consumers regularly do download numerous apps.

What may, however, potentially foreclose effective competition is where a dominant undertaking makes payments to stop its customers, as a practical matter, from selling its rivals’ products. Intel, for example, was found to have abused its dominant position through payments to a computer retailer in return for its not selling computers with its competitor AMD’s chips, and to computer manufacturers in return for delaying the launch of computers with AMD chips.¹⁶

In *Google Android*, the *exclusivity* provision that would require manufacturers to pre-install Google Search App exclusively in return for financial incentives may be deemed to be similar to this.

Having said that, unlike in *Intel* where a given computer can only have a CPU from one given manufacturer, even the exclusive pre-installation of the Google Search App would not have prevented consumers from downloading competing apps. In fact, one need not download a search app to search the web, either, as this can be done by using the browser to navigate to one’s preferred search site.¹⁷ So, again, in theory effective competition from other search apps need not have been foreclosed.

It must also be noted that just because a Google app is pre-installed does not mean that it generates any revenue to Google – consumers have to actually choose to *use* that app as opposed to another one that they might prefer in order for Google to earn any revenue from it. The Commission seems to place substantial weight on pre-installation, which it alleges creates “a *status quo* bias.”¹⁸

14 See Press Release, *supra* note 7.

15 European Commission Press Release “Commission sends Statement of Objections to Google on Android operating system and applications,” April 20, 2016, available at http://europa.eu/rapid/press-release_IP-16-1492_en.htm.

16 Case COMP/37.990 *Intel* (May 13, 2009) http://ec.europa.eu/competition/antitrust/cases/dec_docs/37990/37990_3581_18.pdf.

17 This also raises a question about the relevance of the Commission’s statements in relation to users of Windows Mobile devices making less than 25 percent of their searches using Google Search app as it appears that the Commission is only comparing search activity taking place on search apps rather than search activity taking place through the use of navigation to a search site and through the use of the app. In other words, it is possible that even on Windows Mobile devices, more people use Google to search than Bing, if one considers all the means through which the user access a search site. This, obviously, can only be established by empirical data on search conduct. See Press Release, *supra* note 7, in relation to the use of the search app on Windows mobile devices.

18 See Press Release, *supra* note 7.

The concern with this approach is that it is not possible to know whether those consumers who do not download competing apps do so out of a preference for Google's apps or, instead, for other reasons that might indicate that competition is not working. Indeed, one hurdle as regards conceptualizing the infringement as tying is that it would require establishing that a significant number of phone users would actually prefer to use Google Play Store (the tying product) without Google Search App (the tied product).

This is because according to the Commission's Guidance Paper, establishing tying starts with identifying two distinct products, and

[t]wo 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.¹⁹

Thus, if a substantial number of customers would *not* want to use Google Play Store without also *preferring* to use Google Search App, this would cause a conceptual problem for making out a tying claim.

In fact, the conduct at issue in *Google Android* may be closer to a refusal to supply type of abuse. This would imply that the allegedly abusive conduct in question is Google's refusal to supply the Play Store without strings (i.e. apps) attached. For a refusal to supply to be abusive, the dominant undertaking must refuse to supply (without objective justification) an indispensable input, without access to which all competition in the relevant market on the part of the person requesting access is likely to be eliminated.²⁰ Indeed, the Commission notes that the Play Store is a "must-have" app for device manufacturers.²¹ Such a theory of harm may, in fact, also make more sense given the observation above that the case as it stands appears to be built on a theory of a monopolist tying two products over both of which it is a monopolist, which is unusual in terms of existing precedent.

Refusal to supply also seems to make more sense regarding the prevention of the development of Android forks being found to be an abuse. In this context, it will be interesting to see how the Commission overcomes the argument that Android forks can be developed freely and Google may have legitimate business reasons in wanting to associate its own, proprietary apps only with a certain, standardized-quality version of the operating system.

More importantly, the possible underlying theory in this part of the case is that the Google apps in question – and perhaps even the licensed version of Android – are a "must-have" for device manufacturers, which is close to an argument that they are an essential facility in the context of Android phones. But, that would indeed require a refusal to supply type of abuse to be established, which does not appear to be the Commission's theory of harm.

V. IMPLICATIONS

In earlier writing, the current author had predicted that Google may start charging for Android as a result of the Commission's decision.²² That prediction has, indeed, materialized to a degree: Google has recently announced that it will charge for licensing the apps for Android including the Play Store in response to the Commission's decision.²³ This is not a surprising reaction because unbundling Google Play Store, Google Search App and Google Chrome (to allow manufacturers to pre-install Google Play Store without the latter two) will disrupt Google's main revenue streams (i.e. ad revenue generated through the use of Google Search App or Google Search within the Chrome app) which funds the free operating system.

The outcome as things stand so far clearly raises questions as to whether the European Commission's *Google Android* decision will ultimately benefit consumers. Given that the Commission does not seem to think that Apple constrains Google when it comes to dealings with device manufacturers, in theory, Google should be able to charge up to the monopoly level licensing fee to device manufacturers for the apps in question. If that happens, the price of Android smartphones may (but need not) go up depending on how much of this price rise can be passed

¹⁹ Guidance Paper, *supra* note 5 [51].

²⁰ Case Case C-7/97 *Oscar Bronner GmbH & Co KG v. Mediaprint Zeitungs- und Zeitschriftenverlag GmbH & Co KG, Mediaprint Zeitungsvertriebsgesellschaft mbH & Co KG and Mediaprint Anzeigengesellschaft mbH & Co KG* ECLI:EU:C:1998:569.

²¹ See Press Release, *supra* note 7.

²² See P. Akman, "Will the European Commission's Google Android Decision Benefit Consumers?," July 19, 2018, available at <https://truthonthemarket.com/2018/07/19/will-the-european-commissions-google-android-decision-benefit-consumers/>.

²³ See H. Lockheimer, "Complying with the EC's Android decision," October 16, 2018, available at <https://www.blog.google/around-the-globe/google-europe/complying-ecs-android-decision/>.

onto consumers by device manufacturers. Similarly, app developers may face increasing costs due to the forking of Android. It is also possible that there is a new competitor lurking in the woods that will grow and constrain the potential exercise of market power. However, the message that the Commission sends with *Google Android* to that potential entrant is that a walled-garden built on complete vertical integration of proprietary devices bundled with a proprietary app store is a safer place to be in terms of potential competition law scrutiny than providing an open source and freely available product. This message is somewhat ironic as the walled-garden model of Apple is by definition *uncompetitive*. Both the alternative model of the walled-garden and Google's attempts at generating revenue from an open source model raise important questions about the validity of potential objective justifications that will be raised by undertakings adopting such different business models. None of Google's proposed justifications appears to have been accepted by the Commission in *Google Android*, and objective justification has a very poor record in abuse of dominance proceedings in Europe. Cases like *Google Android* where conduct takes place on technology markets with different business models of monetization where certain practices are argued to be essential to fund otherwise "free" services and products put new emphasis on the importance of what counts as objective justification in such cases. The role of commercial justifications and their assessment by European authorities, as well as the practical effects of decisions such as *Google Android* on consumers remain interesting developments to watch out for in the coming months and years.



GOOGLE ANDROID: RECORD-BREAKING FINE ON ANTI-COMPETITIVE PRACTICES UNDER ARTICLE 102 TFEU



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I. INTRODUCTION

Since mid-July 2018, there has been no publicly available version of the decision that imposed a record-breaking €4.34 billion fine on Google, which is comparable only with its €2.42 billion previous fine in the *Search (Shopping)* case.² We can only hope for it (the decision, not the fine) to land in our Christmas boxes. Nonetheless, one can still appreciate that the European Commission has a strong case,³ which has been built upon the existing strengths offered by the *Microsoft* ruling. In addition, since *Hilti*, making the sale of a product conditional upon taking another complementary product has been dealt with as an abuse of a dominant position because the practice means the consumer has no choice and is vulnerable to exploitation.⁴ The approach adopted in *Tetra Pak* has been re-affirmed by *Microsoft I* as “settled case-law” in that “even when the tying of two products is consistent with commercial usage or when there is a natural link between the two products in question, it may none the less constitute an abuse” under Article 102 TFEU.⁵

II. ANTI-COMPETITIVE TYING

The first anti-competitive conduct refers to an anti-competitive tying. This will come as no surprise to anyone given the bundle of mobile apps and services that Google offers to mobile manufacturers, which includes Google’s Play Store (the official app store of the Android system), Search app, and Chrome browser. All of them are pre-installed on all Android devices. For example, Play Store is a “must-have” app that cannot be downloaded from anywhere else. The adoption of a behavioral economics approach to the pre-installation of such apps follows the *Microsoft* cases, including the Windows Media Player and the Internet Explorer cases. In the latter, users were able to download an alternative browser, but not to remove the Media Player. There were similar concerns that users were locked into the offerings, which were available to them free of charge.

The lock-in effect is now recognized as a “status quo” bias. This unconscious bias means that such users cannot be bothered to search for alternatives on mobile devices. As an alternative to Android, other mobile devices running Windows have pre-installed Microsoft’s search engine, Bing. However, in addition to relying on pre-installation, Google had also paid “certain large” manufacturers and mobile operators for them to ensure that its own apps would retain exclusivity. Due to having locked out both users, through unconscious bias, and potential competitors, through consciously made anti-competitive payments, Google meets the high legal standard of anti-competitive exclusionary conduct leading to consumer harm. The outstanding issue is that any consumer harm cannot be quantifiable in monetary terms, as such apps are offered free of charge. However, why would a highly efficient business, such as Google, which competes on its own merit alone, offer large payments to mobile manufacturers? A real premium of this deal is an exclusive pre-installation of Google’s apps, which demonstrates an exclusionary conduct of alternative apps.

As a justification, Google attempted to prove that its conduct was necessary to “monetize” Google’s investment in Android and “to convince manufacturers and mobile network operators to produce devices for the Android ecosystem.” However, upon examination of the manifold streams of Google’s revenues from its Play Store, search, and advertising on Android mobiles, this justification did not convince the Commission. The latter has now – for a second time – recognized the value of data as “a significant stream of revenues” in digital markets. In the *Search (Shopping)* case, the Commission made a specific reference to the monetization of users’ data.⁶ Eventually, it would be possible to give the benefit of the doubt and look at such payments as being Google’s advertising paid to manufacturers for the promotion of its apps. Why, then, would Google pay for its own advertising in view of its world-wide reputation as a universal search-engine tied to advertising? Such a defense would not pass the threshold of any good logic or common sense. Therefore, Google’s strategy of offering exclusive payments for the pre-installation of its own apps is not objectively justifiable.

2 See COMP 40099, *Google Android*, July 18, 2018, unpublished (status last checked on December 10, 2018); COMP 39740, *Google Search (Shopping)*, July 27, 2018, published on December 18, 2018.

3 European Commission, IP/18/4581: “Antitrust: Commission fines Google €4.34 billion for illegal practices regarding Android mobile devices to strengthen dominance of Google’s search engine,” Brussels, July 18, 2018.

4 See *Eurofix-Bauco/Hilti* [1988] OJ L 65/19, para 75; Case T-30/89, *Hilti v. Commission* [1991] ECR II-1439 [1992] 4 CMLR 16; appeal dismissed see Case C-53/92 P [1994] ECR I-667 [1994] 4 CMLR 614.

5 See Case C-333/94 P, *Tetra Pak International v. Commission* [1996] ECR I-5951, para 37; re-affirmed in Case T-201/04, *Microsoft* [2007] 5 CMLR 11, para 941-2.

6 See *Google Search (Shopping)*, paras 158 and 320, in particular “users do not pay a monetary consideration for the use of general search services; they contribute to the monetisation of the service by providing data with each query.”

III. EXCLUSIVITY ARRANGEMENTS

The present case goes beyond both *Microsoft I* and *II*'s unexpected behavioral economics approach to tying, as it involves payments to manufacturers which could be interpreted as excluding similar offerings of browser, search engine and app stores on mobile devices. As has previously been explained, it appears very clear that the Commission has met the standard required of an anti-competitive, exclusionary foreclosure effect on the residual competition from alternative providers of Android operating systems. Due to Google's smart business offering of such apps free of charge, it is impossible to evidence consumer harm in digital markets where pre-installation is free of charge. Thus, Google's payments to manufacturers for an exclusive pre-installation limit technical development under Article 102(b). In all likelihood, such an anti-competitive practice is capable of harming consumers through reducing the amount of choice available in the long run. There is a distinct demand for alternative offerings of search engines, browsers or app stores on mobile devices. Thus, developers of such apps cannot compete effectively if they are unable to match Google's payments. In fact, they are excluded from the market by an exclusivity arrangement, and, ultimately, there is no incentive at all to develop alternative apps for mobile users. However, in this particular case, there is nothing that could remotely be interpreted as being against legal certainty as established by the previous line of case law on tying, exclusivity, and objective justifications.

Another justification used by Google relies on its need to avoid the "fragmentation" of the Android ecosystem.⁷ Again, this was not objectively justified, as Android prevented technological development through its so-called "Android forks," i.e. any other version of Android that was not approved by Google.

IV. REFLECTIONS ON THE *GOOGLE II* CASE

Overall, it comes as no surprise that there are fewer relevant and independently reliable sources on the *Google II* case. For example, Etro & Caffarra examined whether tying is indeed a profitable strategy that reduces consumer welfare by forcing all or most consumers to use expensive devices with an inferior search app.⁸ They argued that by offering its GPS suite alongside YouTube or Chrome, Google monetizes their value through third party advertisers.⁹ However, one aspect that appears to have been neglected in the specialist literature on *Google II* is the aggregation of large-scale data by third party advertisers and the sharing of such data with big data analytics companies.¹⁰ Some have claimed that mobile applications are able to track users' movements, even without their knowledge, including hearing the user's surroundings.¹¹ Thus, the digital economy would require the identification of new forms of abuse that have never before been considered possible.

Although manufacturers of mobile phones may still be able to pre-install similar rival applications, there is limited space available on mobile devices.¹² In contrast, Todd argued that moving Google's applications from the mobile's screen, or even deleting them, is possible with some cognitive effort, offering the example of Samsung's pre-installed Google Hangouts.¹³ The practicalities of enjoying alternative applications remain rather elusive. Furthermore, as alternative applications do not enjoy exclusivity, they are not given Google's prominent position. This makes such alternatives impracticable. To put it simply, Google's rivals would need to provide both an alternative Play Store, which includes around 1.5 million applications,¹⁴ and a search engine that is pre-installed as a default on mobile devices running with the Android operating system.¹⁵ This is costly for alternative providers.

7 On fragmentation specifically see Anca D. Chirita, "Google's Anti-Competitive and Unfair Practices in Digital Leisure Markets," 11 (2015) 1, 118 ff.

8 See Federico Etro & Cristina Caffara, "On the economics of the Android case," 13 (2017) European Competition Journal 2, 284.

9 Ibid, 285.

10 See Anca D. Chirita, "Written Evidence to HM Treasury's Digital Competition Expert Panel," December 7, 2018, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3297564.

11 See Janice C. Sipior, Burke T. Ward & Linda Volonino, "Privacy Concerns Associated with Smartphone Use," 13 (2014) Journal of Internet Commerce, 177.

12 Etro & Caffara (2017), 287.

13 See Patrick F. Todd, "Out of the box: illegal tying and Google's suite of apps for the Android OS," 13 (2017) European Competition Journal 1, 80.

14 Sipior et.al (2014), 178. For example Apple's Apps Store meets consumer demand for innovative mobile software.

15 See Dennis W. Carlton & Michael Waldman, "The Strategic Use of Tying to Preserve and Create Market Power in Evolving Industries," 33 (2002) RAND Journal of Economics 2, 194; Etro & Caffara (2017), 291.

In this scenario, Etro & Caffara recognized that there is, indeed, a strong default bias because consumers would normally use only applications that are pre-installed on their mobiles. This is even more the case where such applications are displayed prominently on the phone's screen.¹⁶ In contrast, other commentators have suggested that the Commission's approach to default bias towards Google's suite of applications due to their prior pre-installation is purely speculative.¹⁷ Under the U.S. rule of reason, there would possibly be efficiency gains for consumers from the integration of such applications in a bundle rather than an emerging bias against potential rivals, including the exclusion of the latter. While the theory of unconscious bias is based on behavioral economics, the lock-in effect has previously been successfully used in the *Microsoft* cases. Ultimately, it remains to be seen whether this is not an enforcement error as in *Microsoft II* in the sense that being unable to monetize both its applications and the Android operating system, Google would later have insufficient incentives to continue investing in innovation.¹⁸ But is Android really innovative given its many updated versions in a short time?¹⁹

Other commentators have gone on to demonstrate that, by offering its GPS free of charge to manufacturers, Google forecloses the market entry of as efficient search engines, which, in turn, decreases consumer welfare.²⁰ It is, however, difficult to compete with Google due to the latter having secured exclusivity from mobile phone manufacturers, which is well-known as a naked restriction of competition. Under the prohibition of abuse of a dominant position, the foreclosure of an as efficient competitor as the dominant undertaking through long-term exclusivity arrangements has long been problematic. Google clearly dominates both the universal search engine and the advertising market, and it is difficult for rival search engines to replicate its large-scale search engine to attract as many users as possible to improve the quality of their search engines.

In the spirit of Schumpeterian creative destruction ("schöpferische Zerstörung"), attempts by developers to innovate on mobile devices do not benefit users in the long run. Failed attempts to innovate are often, inefficiently, too costly for users, who end up paying for the real cost of the race for innovation. One very recent real-life example is offered by the technical requirements expected from EU citizens' mobile devices for the purpose of applying for settlement in the UK. The devil is in the detail regarding the technical specifications of the pilot scheme run by the Home Office. Higher education employees invited to apply for settlement must comply with the following: "a smartphone or tablet manufactured by Samsung, Google or Sony with Near-Field Communication, running with Google's Android 6.0 (Marshmallow) or above, including 135 MB and 3G/4G networks."

As of October 2018, only 21.3 percent of devices with a Play Store run Android 6.0. Furthermore, a Samsung device with an earlier Android version cannot be upgraded to Android 6.0; a new purchase is therefore required. For the above specifications, the following pricing options are ridiculously expensive for one scan and a photo required by the Home Office: Google's Motorola G6 Play (£129.95 from Argos), Sony's Xperia (£149.00 from Carphone Warehouse), and Samsung Galaxy's J6 Android 8.0 (Oreo) (£139.95 from Argos). The cheapest option of all is the SIM-free "bundle" compared to a monthly subscription (Sony's Android 7.0 (Nougat) (£119.99 from Curry's)). The oddity of this social experiment is that the bundle is tied to a legal requirement of a pilot scheme application. It is part of an identification process: a scan of the very sensitive biometric chip included in the electronic passport and a photo. An estimated 25,400 EU academics would be paying roughly £3,047.746 for Google's Android bundle while an estimated 2.29 million of EU citizens, as of May 2018, could pay £274,777.100, that is, more than a quarter of a billion pounds sterling. Is the Commission's fine on Google Android backfiring on EU citizens? U.S. sources confirm this to be the case because manufacturers can no longer access Android free of charge. In fact, the overwhelming dominance of Android on such mobile devices has brought Google around £17 billion as profit from mobile advertising alone.²¹

In real life, an application that was supposed to be free of charge is yet another tied sale of a Google bundle under pressure, and with too limited a choice of mobile manufacturers. Could the Commission send the bill overseas to Mountain View, California, please?

16 Etro & Caffara (2017), 293.

17 See Todd (2017), 88.

18 Ibid, 90.

19 Others suggest that Android apps were slower to develop, see Gerard Goggin, "Google phone rising: The Android and the politics of open source," 26 (2012) *Journal of Media & Cultural Studies* 5, 747 and 749, where it is suggested that Google's Android has fallen short of its promise to deliver a radically different consumer experience.

20 Ibid.

21 Source: <https://www.bloomberg.com/news/articles/2016-01-21/google-s-android-generates-31-billion-revenue-oracle-says-ijor8hvt>.

ASSESSING THE IMPACT OF VERTICAL INTEGRATION IN PLATFORM MARKETS



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I. INTRODUCTION

A number of voices have recently pleaded for an overhaul of the current antitrust doctrine. Some propose to “invigorate vertical merger enforcement” because competition authorities have put too much faith in the so-called Chicago doctrine, thereby leading to lenient enforcement.² Others doubt that there is enough ground for such a revision,³ arguing that, first, most empirical studies conclude that vertical mergers lead to efficiency gains that ultimately benefit consumers and, second, the theoretical literature does not provide robust enough principles to write such guidelines. Last, many have raised the question of whether antitrust policies should account for specificities of multi-sided platforms.⁴

Understanding the impacts of vertical mergers in platform markets is indeed an important question because antitrust authorities are confronted more and more frequently with mergers in so-called two-sided markets. Software platform industries have, for instance, recently witnessed many sudden changes in the nature of the relationship between software and hardware producers. Traditional suppliers of operating systems have notably ventured into the hardware market, and, at the same time, prominent hardware manufacturers have developed their own operating systems. These changes have raised the issue of foreclosure of nonintegrated competitors in a context where network effects are endemic.

The academic literature has already brought several important insights on vertical relations in two-sided markets.⁵ We content ourselves here with a brief description of our own research on this topic.⁶ Our main results may be stated as follows. First, indirect network effects create a form of demand complementarity at the downstream level that softens the anticompetitive effects of vertical integration. This effect depends on the overall strength of the indirect network effects. Second, vertical integration creates various sources of market power. How such market power is exerted, and its impact on competition, depends on how the integrated firm balances its price instruments to harness the indirect network effects. This depends, in turn, on how each side of the market values the participation of users from the other side, or, in short, the structure of indirect network effects. We show, in particular, that there is no systematic correlation between stronger upstream market power and foreclosure of competitors or consumer harm.

II. A FRAMEWORK TO ANALYZE VERTICAL INTEGRATION WITH TWO-SIDED NETWORK EFFECTS

The existing literature on the competitive impact of vertical integration between an upstream input supplier and a downstream manufacturer (with no network effects) has highlighted a trade-off between the efficiency gains brought by the merger and its negative impact on competition on the buyers’ market.⁷ The efficiency gains may come either from synergies created by the merger or from the removal of a double marginalization (that is, the integrated manufacturer is now able to get the input at a lower price). Thanks to these efficiency gains, the integrated manufacturer tends to behave more competitively on the buyers’ market. The anticompetitive effect of vertical integration may be explained as follows: with respect to the pre-merger situation, and thanks to the efficiency gains associated to vertical integration, the integrated firm is able to charge the nonintegrated manufacturer a higher price for its input. Differently put, vertical integration creates some market power on the upstream market, that is, *vis-à-vis* the nonintegrated manufacturer. The increased input price has two impacts: it makes the nonintegrated manufacturer less efficient, which then tends to increase its downstream price; it also changes the pricing incentives of the integrated manufacturer. Overall, when the efficiency effect of vertical integration is sufficiently strong, both manufacturers’ prices decrease and the merger increases the surplus of buyers. When, by contrast, the anticompetitive effect of the merger is strong enough, both prices increase and the merger reduces the surplus of consumers.

2 Salop (2018), “Invigorating Vertical Merger Enforcement,” Yale Law Journal (127).

3 See the FTC Hearing #5 regarding “Vertical Merger Analysis; the Role of the Consumer Welfare Standard in U.S. Antitrust Law” (www.ftc.gov/news-events/events-calendar/ftc-hearing-5-competition-consumer-protection-21st-century).

4 See, e.g. Katz & Sallet (2018), “Multisided Platforms and Antitrust Enforcement,” Yale Law Journal (127).

5 See, among others, Evans (2013), “Economics of Vertical Restraints for Multi-Sided Platforms,” CPI Journal, 9.

6 Pouyet & Trégouët (2018), “The competitive effects of vertical mergers in platform markets.”

7 See, for instance, Ordober, Saloner & Salop (1990), “Equilibrium Vertical Foreclosure,” American Economic Review; Chen (2001), “On Vertical Mergers and Their Competitive Effects,” RAND Journal of Economics.

As an illustration of our framework, think of a market in which some manufacturers compete to sell some devices to consumers. Each device must be equipped with an operating system in order to be operational. Some platforms compete to license their operating systems to manufacturers. Devices provide buyers with some intrinsic benefits but also with the opportunity to buy applications running on the operating system installed on their devices. These applications are created by developers.

Observe the similarities with the literature mentioned just above: software platforms provide an input to device manufacturers and manufacturers compete to sell their devices to buyers. Our main departure from that literature is that we consider indirect network effects between buyers of devices and developers of applications: the larger the number of devices sold, the more interesting it is for developers to create applications; reciprocally, the larger the number of applications available on an operating system, the more interesting it is for a customer to buy a device running that operating system. As we will argue later on, two aspects of these indirect network effects are important, namely their overall strength and their structure. The structure of indirect network effects relates to how much one side of the market (say, buyers) values more or less the number of agents on the other side of the market (hence, application developers). The strength relates to the compounding effect of these valuations.

Observe that, in our framework, there are three different pricing instruments: (1) the prices charged by manufacturers on buyers for their devices; (2) the license fees set by platforms for the use of their operating systems by manufacturers; and (3) the developer fees charged by platforms on developers to make their applications available on their operating systems. The license fees can also be viewed as the means through which the monetization of user-generated data is shared between the manufacturer and the platform. The academic literature has emphasized that a merger changes both the competition between manufacturers on the buyers' market (which is the downstream market in our analysis) and the license fee charged by the integrated platform to the nonintegrated manufacturer for the sale of its operating system (which is the upstream market). In our framework, the merger between a platform and a manufacturer will also change the fee levied by platforms on developers, which impacts buyers because of the presence of indirect network effects.

III. ROLE OF THE *STRENGTH* OF INDIRECT NETWORK EFFECTS

How is the traditional competitive assessment of vertical integration amended in the presence of indirect network effects? To answer this question, let us first assume that platforms levy no fees from developers. While this assumption is unlikely to be satisfied in many real-world situations, it nonetheless helps understanding one particular role of indirect network effects. Observe that developers can make their applications available on any operating systems when platforms levy no fees from developers. This then implies that our model can be viewed as an extension of the standard framework used to analyze the impact of vertical integration, where we incorporate indirect network effects between buyers and application developers.

The first impact of these network effects is that they create a form of demand complementarity at the manufacturers' level. To understand, suppose that a manufacturer decreases the price of its own devices. For a given number of application developers, the demand faced by the other manufacturer decreases, thanks to the substitutability between devices. This is the standard rivalry or competition effect, which leads that manufacturer to respond by decreasing its price. There is, however, another impact. Following the price decrease, there are more buyers of devices overall. Thanks to indirect network effects, there are thus more application developers, which increases the buyers' demands for both devices. As a result, following the decrease of the price of a manufacturer, the other manufacturer's demand may increase and that manufacturer may respond by increasing its own price. Therefore, when indirect network effects are strong (weak) enough relative to the degree of substitutability between manufacturers' devices (which is a proxy for the intensity of competition on the downstream market), manufacturers behave as if their products were demand complements (substitutes).

The case of substitutes is considered in the existing literature, and, as far as vertical integration is concerned, features the trade-off described previously. The case of complements leads to a different competitive assessment of vertical integration. We show, in particular, that there is never foreclosure of the nonintegrated manufacturer (that is, its profit always increases with respect to the pre-merger situation) even though vertical integration still creates some market power and allows the integrated platform to increase its license fee beyond the pre-merger level. The main difference is that the efficiency effect now works in favor of the nonintegrated manufacturer, which benefits from facing a more efficient integrated manufacturer when products are demand complements. In a nutshell, indirect network effects tend to scale down the intensity of product market competition at the manufacturers' level and antitrust authorities should be less concerned by the foreclosure effect of vertical integration when indirect network effects are strong.

A key policy issue in the competitive assessment of vertical integration is whether it should be sufficient to prove that the nonintegrated downstream competitor lose from the merger or whether it is necessary to show that it also harms customers of the downstream competitor. When products are demand complements, our analysis predicts unambiguously that the integrated manufacturer's downstream price decreases and that the nonintegrated manufacturer's price increases. To summarize, when indirect network effects are strong enough, the merger benefits the nonintegrated downstream competitor even if they pay a higher license fee, but it harms their customers. Our analysis therefore pleads for an approach that accounts carefully for the welfare of the customers of the nonintegrated downstream competitors.

IV. ROLE OF THE *STRUCTURE* OF INDIRECT NETWORK EFFECTS

The analysis undertaken so far has assumed that platforms levy no fees from developers. Assume that this is no longer the case: developers fees are endogenous. Let us consider, again, the impact of vertical integration between a platform and a manufacturer. Developer fees introduce several new aspects, which come from the two-sided aspect of our modelling.

To begin with, let us ask the following question: what is the socially optimal structure of prices? Clearly, the license fees should be set at the marginal cost of providing the operating systems. What about the manufacturers' prices and the fees charged on application developers? These prices should be set so as to harness the indirect network effects across both sides of the market, as it has been shown in the two-sided market literature.⁸ To illustrate, if buyers of devices value strongly the applications and developers value weakly the number of buyers to whom they can sell their applications, then application developers should be "subsidized," through a low or even negative fee, and buyers of devices should be "taxed," through high prices of the devices, so as to generate a surplus from the interactions between both sides of the market as large as possible.

The two-sided market literature tends to support the idea that, to some extent, a fierce competition limits the ability of platforms to implement asymmetric price structures. Differently put, a fierce competition between platforms prevents them from harnessing the indirect network effects between buyers and application developers. Some market power may restore that ability, thereby bringing the price structure closer to the one that would be socially optimal. A similar phenomenon emerges in our framework because platforms have no direct access to buyers of devices: competition between nonintegrated platforms does not allow to implement an asymmetric price structure and leads to developers' fees and license fees equal to the corresponding marginal costs.

We can now continue with the analysis of vertical integration. As usual, the integrated firm will recover some market power over nonintegrated manufacturers. But, most importantly, the integrated firm now controls the pricing on both sides of the market, namely the price for its device and the fee paid by developers. Vertical integration creates a new source of market power because the integrated platform can now charge developers a supra-competitive fee. This market power relates to the fact that the integrated firm has monopoly power over the access to the buyers of its devices, thereby implying that application developers may be willing to pay in order to interact with those buyers. An implication is that vertical integration now partially restores the ability of the integrated platform to choose an asymmetric price structure. How such market power is exerted depends on the structure of indirect network effects.

To illustrate, suppose that buyers of devices strongly value applications whereas developers weakly value the number of buyers, that is, network effects are asymmetric and stronger on the buyers' side. The integrated platform then wants to boost the number of applications developed and to charge buyers of devices to capture a fraction of the surplus thereby created. This is best done by, simultaneously, setting a high price for its own device, a high license fee, and a subsidy for developers. This improved, though imperfect, internalization of the interactions across the two sides of the market may bring some welfare gains since the price structure is closer to the socially optimal one. When indirect network effects are sufficiently asymmetric, vertical integration turns out to benefit the nonintegrated manufacturer (even though the license fee increases), buyers, and application developers. When, by contrast, indirect network effects are weakly asymmetric, vertical integration leads to foreclosure and harms buyers. This illustrates the role of the structure of indirect network effects.

If indirect network effects are skewed the other way around (that is, buyers of devices weakly value applications and developers strongly value the number of buyers), the integrated firm now wants to subsidize buyers and tax developers. This is best done by setting a low price for the integrated manufacturer's device, a low license fee for the integrated platform's operating system, and a high developer fee. Our analysis shows that even if the license fee charged by the integrated firm does not increase, the nonintegrated manufacturer may be hurt by the merger, mainly because the demand it faces depreciates. There are indeed fewer applications and competition on the buyers' market is stronger. Buyers and application developers may well benefit from the merger because, again, the integrated firm partially internalizes indirect network effects.

⁸ See, for instance, Rochet & Tirole (2006), "Two-Sided Markets: A Progress Report," RAND Journal of Economics; Armstrong (2006), "Competition in Two-Sided Markets," RAND Journal of Economics.

Whatever the structure of indirect network effects, foreclosure may emerge, both when devices are complements and when they are substitutes. Indeed, these results depend on the structure of indirect network effects rather than on their overall strength. Foreclosure may now be an unintended collateral damage of the internalization of indirect network effects through an asymmetric price structure implemented by the integrated firm and is no longer systematically the result of the nonintegrated firm facing a more efficient rival or being charged a higher royalty.

An interesting by-product of our analysis is as follows. Consider a vertical merger that does not bring any efficiency gains (either through a cost reduction or the elimination of a double marginalization) and creates some market power. That merger may still be cleared by antitrust authorities because the internalization of indirect network effects may be strong enough to benefit buyers, developers, and nonintegrated competitors. Perhaps paradoxically, in platform markets, the market power created by the merger may actually be the basis of an efficiency defense.

V. CONCLUSION

Our analysis provides a novel theory of competitive effects of vertical integration in the context of platform markets. What lessons can be drawn for antitrust authorities? First, the so-called “raising rivals’ cost” theory and the “eliminating markups” theory have remarkably simple predictions when indirect network effects are strong enough and platforms levy no fees from developers. Second, there is no systematic correlation between a stronger market power for the integrated firm and foreclosure of competitors or consumer harm when platform developers’ fees are endogenous; the analysis then depends on the structure of indirect network effects. As Michael Riordan pointed out “it is a mistake to suppose that only one theory of competitive effects can be valid in any given case” and accordingly “[courts and regulatory authorities] should provide evidence on factual conditions supporting the theories and on the actual importance of the theories for economic welfare.”⁹ Our analysis emphasizes that this is especially true in platform markets.



⁹ Riordan (2008), “Competitive Effects of Vertical Integration,” in *Handbook of Antitrust Economics*, edited by Paolo Buccirossi, 145–82. Cambridge, MA: MIT Press.

AMAZON AND THE LAW OF THE JUNGLE

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I. INTRODUCTION

Has the digital economy turned into a jungle? And in case it has, what type of jungle is it and shall we do anything about it? For some, we already live in a so-called triple canopy jungle, that is “the deepest part of the jungle... where tall trees block out all the light and nothing can grow on the ground.”² According to this view, the GAFA (Google, Amazon, Facebook, and Apple), FAANG (Facebook, Apple, Amazon, Netflix, and Google), MAGAF (Microsoft, Amazon, Google, Apple, and Facebook), “Frightful Five,” or robber barons of this world are like tall trees stopping much of the sunlight entering the jungle and thereby stifling the growth of new life on the forest floor. For others, the triple canopy metaphor would be too simplistic, as it fails to take into consideration a full set of other factors that influence how a healthy forest ecosystem truly develops. Instead of tall trees blocking the light, Big Tech should be better viewed as lighthouses pointing to where relevant competition takes place and indirectly governing, and presiding over, other firms’ innovation efforts.³

These and related questions are currently discussed in several distinguished fora, not least the OECD⁴ and the U.S. Federal Trade Commission. From September 2018 through February 2019, the latter is holding a series of hearings devoted to important topics such as the “Identification and Analysis of Collusive, Exclusionary, and Predatory Conduct by Digital and Technology-Based Platform Businesses” and the “Antitrust Framework for Evaluating Acquisitions of Potential or Nascent Competitors in Digital Marketplaces.”⁵

There is also a clear trend, at least in the EU, to step up public competition enforcement in the tech sector. Compared to their U.S. counterparts, authorities on this side of the Atlantic have gained increasing confidence in their capabilities to pursue the often exploratory and very complex cases that emerge from the digital economy. Regarding the GAFA, besides the three well-known cases of abuse of dominance involving Google,⁶ the German Federal Cartel Office (“Bundeskartellamt”) is allegedly close to finalizing its inquiry into Facebook,⁷ and Amazon is currently investigated by both the European Commission (“Commission”) and Bundeskartellamt for possible infringement of EU and German competition laws.

The broad range and sophistication of anticompetitive strategies that the investigated GAF allegedly deploy are challenging competition authorities to make extensive use of their powers, available tools, and other resources. This is clearly illustrated by the complementary investigations into Amazon’s practices presently conducted by the Commission and the Bundeskartellamt.

2 J. Tepper & D. Hearn, “If You Don’t Think Today’s Tech Giants Are Vicious, Just Ask Venture Capitalists,” Pro Market, November 27, 2018, <https://promarket.org/silicon-valley-vicious-dark-jungle/> (excerpt from the book “The Myth of Capitalism: Monopolies and the Death of Competition” Wiley: 2018).

3 N. Petit, Technology Giants, the “Moligopoly” Hypothesis and Holistic Competition: A Primer, Working Paper, October 20, 2016; see also @CompetitionProf (alias N. Petit), Tweet, December 1, 2018, on file with author (“Tech giants’ monopoly positions and entry threats [are] like beacon of lights for developers. Innovative efforts then invested in bypass, preemption, resegmenting or entirely new products. Like patents, platforms monopolies indirectly coordinate innovation efforts”).

4 See OECD, Rethinking Antitrust Tools for Multi-Sided Platforms, 2018, <http://www.oecd.org/daf/competition/Rethinking-antitrust-tools-for-multi-sided-platforms-2018.pdf>.

5 FTC, Hearings on Competition and Consumer Protection in the 21st Century, <https://www.ftc.gov/policy/hearings-competition-consumer-protection>.

6 European Commission, CASE AT.39740, *Google Search (Shopping)*, July 27, 2017, available at: http://ec.europa.eu/competition/antitrust/cases/dec_docs/39740/39740_14996_3.pdf; EC, Statement by Commissioner Vestager on Commission decision to fine Google €4.34 billion for illegal practices regarding Android mobile devices to strengthen dominance of Google’s search engine, July 18, 2018. See also Simonetta Vezzoso, “Android and Forking Restrictions: On the Hidden Closedness of ‘Open,’” Market and Competition Law Review, Volume II, Issue 2, 2018, 17-46. The third investigation relates to Google’s AdSense, see EC, Antitrust: Commission takes further steps in investigations alleging Google’s comparison shopping and advertising-related practices breach EU rules, July 14, 2016.

7 Bundeskartellamt, “Bundeskartellamt initiates proceeding against Facebook on suspicion of having abused its market power by infringing data protection rules,” March 2, 2016.

II. THE EU PRELIMINARY INVESTIGATION

The EU is conducting a preliminary investigation into some of Amazon's practices in its dual role of provider of intermediation services to merchants and of online retailer. For a whole range of products, Amazon directly competes with merchants making use of the Amazon Marketplace. When announcing the "very early days" of an EU investigation into Amazon practices, Commissioner Vestager made very clear that the question they were focusing on is related to data.⁸ The Commission noticed already in the Final Report on the E-commerce Sector Inquiry that marketplaces were collecting data to improve business performance, such as to "analyse customer behaviour and demand (...), to prioritise features that may be more popular in a certain geolocation; optimise product listings and displays (...); improve marketing activity (...); and develop the service provided as well as their website."⁹ The Commissioner said that Amazon might have used data collected from merchants hosted on its platforms not only to legitimately improve its services but also "to make its own calculations as to the next big thing."¹⁰ Put differently, Amazon would use the retailer data that it collects to identify successful products sold by third party merchants and add them to its own offerings as online retailer.

Commissioner Vestager confirmed that formal requests for information ("RFIs") were sent out to "market participants in order to understand this issue in full." A version of the questionnaires become public.¹¹ It was apparently sent to merchants offering products on Amazon.de that Amazon itself, as a retailer, had been adding to its own offerings during the previous five years.¹² The Commission's questions related to the type of products involved (per ASIN, i.e. Amazon Standard Identification Number), the period during which these products were offered on Amazon.de before Amazon started offering them itself, and whether, and if so when, the merchants stopped offering these same products on Amazon.de.

Merchants were also requested to provide further details on their relationship with Amazon while selling those products on Amazon.de, whether Amazon suspended the merchants' offerings on the platform, and whether they knew if Amazon ever contacted the suppliers of the products sold by those merchants on the marketplace in order to sell them itself. Moreover, the Commission asked detailed questions about the impact that Amazon's market entry had on the merchants' business (possibly differentiated according to the product specifically affected), and in particular whether merchants continued offering the same products on Amazon.de.

If merchants continued selling them, the Commission asked whether merchants lowered the prices of these specific products in order to compete with Amazon, and how this impacted the overall distribution (also via other channels) of these and other products. A different set of questions related to whether the merchant knew if Amazon had begun selling (under a private label ("white label")) a product that was identical or very similar (and therefore in direct competition with) a product that the merchant had offered on the Amazon Marketplace. Finally, the Commission wanted to know which categories of data were most relevant to merchants when selling on Amazon.de (such as current and/or previous competitors' prices, average prices of certain products, information about customer searches (keywords and other search terms), customer ratings, seller ratings, competitors' terms of sale, their return rates, information related to their suppliers, criteria for placement in the "Amazon Buy Box," etc.), and the extent to which merchants had access to each of them.

The letter accompanying the RFI that became public didn't specify whether the Commission was pursuing the case under Article 101 and/or 102 TFEU, but mentioned explicitly that the core of the EU's concerns related to Amazon's dual position and, specifically, to Amazon's collection and use of data generated or collected on Amazon Marketplace in connection with third party transactions for its own online retail activities.

The EU's concerns, therefore, seem to point to an informational advantage that Amazon enjoys because of its dual role and that it exploits to boost its own sales as online retailer on the same platform that other merchants use, and by doing that Amazon outcompetes them. Merchants selling their products on Amazon Marketplace don't have the technical possibility to stop Amazon from using the transaction data that it collects for its own purposes as a direct competitor. From this perspective, the EU Amazon preliminary investigation bears some resemblance to the Commission's previous investigations into Google's behavior, in particular the firm's alleged use of competitors' original material taken from their websites, such as, for instance, user reviews, "sometimes against their explicit will,"¹³ that has apparently revived in parallel to the three more

8 EC, Press Conference, September 19, 2018, Video available at <https://ec.europa.eu/avservices/video/player.cfm?ref=1160574&lg=INT&sublg=none>.

9 EC Commission Staff Working Document accompanying the Final Report on the E-commerce Sector Inquiry, SWD(2017) 154 final, May 10, 2017 para 641, http://ec.europa.eu/competition/antitrust/sector_inquiry_swd_en.pdf.

10 *Supra* note 8.

11 Wortfilter.de, Amazon: EU Kommission untersucht mögliches wettbewerbswidriges Verhalten, September 19, 2018.

12 *Ibid.*, Question 9.

13 EC, Commission seeks feedback on commitments offered by Google to address competition concerns – questions and answers, April 25, 2013.

advanced Google cases mentioned above.¹⁴ Whereas the Google “scraping case” has an intellectual property dimension to it,¹⁵ the Amazon case clearly relates to issues of data pertaining to its collection and control. Both have in common that the platform might benefit from investments made by other firms that use the platform’s infrastructure for conducting their businesses, either in the direct creation of content (e.g. reviews) or in conducting “experiments” with products in order to identify consumers’ demand.¹⁶

A recent Background Paper published by the Bundeskartellamt especially refers to possible competition policy issues raised by hybrid platforms, in particular regarding foreclosure.¹⁷ It uses the example of a company operating a marketplace that acts as a reseller on the same platform and competes with merchants selling their products on the same marketplace. As a further problematic constellation, the paper mentions cases in which market participants are excluded, by contractual or technical means, from exploiting data that they were instrumental in generating, which could have a negative impact on competition and innovation.

III. THE COMPLEMENTARY ABUSE PROCEEDING BY THE BUNDESKARTELLAMT

On November 29, 2018 the Bundeskartellamt announced the initiation of an abuse proceeding against Amazon to “examine its terms of business and practices towards sellers on its German marketplace amazon.de.”¹⁸ It is not the first time that the German competition authority has investigated Amazon’s practices on the marketplace. In January 2013 the Bundeskartellamt conducted an online survey of 2,400 merchants selling their products on Amazon Marketplace focusing on the effects of a price parity clause. Amazon.de contractually prohibited merchants from selling products they offered on Amazon Marketplace cheaper on any other internet sales channel,¹⁹ a practice that Amazon.de publicly ended in August 2013.²⁰

In announcing the more recent investigation, Andreas Mundt, President of the Bundeskartellamt, underlines that “Amazon is the largest online retailer and operates by far the largest online marketplace in Germany. Many retailers and manufacturers depend on the reach of Amazon’s Marketplace for their online sales. Amazon functions as a kind of “gatekeeper” for customers. Its double role as the largest retailer and largest marketplace has the potential to hinder other sellers on its platform.” He also points to the “many complaints” that the German authority has received as the trigger for the investigation. In a magazine interview published in October 2018, Chairman Mundt, while reiterating his office’s focus on e-commerce and the overall objective to keep access to markets open, mentioned that they were receiving many complaints about Amazon’s terms and conditions but were still reflecting on the most suitable approach to the issues raised.²¹

The November 2018 press release announcing the investigation refers explicitly to the questionnaires sent out by the Commission during the summer of 2018 to “several hundred German retailers,” and clarifies that the “Bundeskartellamt’s and the Commission’s proceedings supplement one another.” According to Article 11(6) of Regulation 1/2003, if the two authorities were investigating the same conduct, the initiation of formal infringement proceedings by the Commission against Amazon would have the immediate effect of depriving the Bundeskartellamt of its competence to further investigate. At any rate, the same provision states that “(i)f a competition authority of a Member State is already acting on a case, the Commission shall only initiate proceedings after consulting with that national competition authority.”²²

The press release further specifies that “(a) criterion for the relevance of this conduct under competition law is that Amazon holds a dominant position or that the sellers are dependent on Amazon. There are indications of both, in particular on a possible market for marketplace services to consumers.” Therefore, it seems, the Bundeskartellamt is investigating Amazon’s conduct both for possible abuse of dominant posi-

14 See Reuters, “Does Google harm local search rivals? EU antitrust regulators ask,” November 30, 2018.

15 See J. Almunia, “Intellectual property and competition policy,” Speech delivered at the IP Summit 2013, December 9, 2013.

16 Cfr. S. Vezzoso (2016). Competition policy in a world of big data, in F.X. Olleros FX M. and Zhegu M (Eds), Research Handbook on Digital Transformations. Edward Elgar, Cheltenham, 400, 413 (“While third parties bear the cost of discovering market niches in terms of innovative and interesting products, Amazon employs big data in order to target successful third party offerings so as to appropriate value from their discoveries and innovations. Contrary to a conventional supply chain, in fact, in a platform setting suppliers, rather than retailers, bear the costs of experimentation” reference omitted).

17 Bundeskartellamt, Was kann und soll die kartellrechtliche Missbrauchsaufsicht?, Hintergrundpapier, October 4, 2018.

18 Bundeskartellamt, “Bundeskartellamt initiates abuse proceeding against Amazon,” November 29, 2018.

19 Bundeskartellamt, “Bundeskartellamt surveys Amazon Marketplace sellers,” February 20, 2013.

20 Bundeskartellamt, “Amazon announces end to price parity,” August 27, 2013.

21 Bundeskartellamt, “Hartes Verhandeln muss erlaubt bleiben,” October 12, 2018.

22 Council Regulation (EC) No 1/2003 of 16 December 2002 on the implementation of the rules on competition laid down in Articles 81 and 82 of the Treaty, OJ 2003, L1/1.

tion on the market for B2C marketplace services for online sales and for abuse of relative market power under Section 20 GWB.²³ The latter is a specificity of German competition law and refers to the prohibition of exclusionary abuses of relative market power and superior market power *vis-à-vis* small and medium sized competitors. As noted in a recent study on the modernization of abuse control commissioned by the German Minister of Economics,²⁴ Section 20 GWB already provides for a lower intervention threshold than the provisions on the abuse of dominant position (Sections 18 & 19 GWB) and it can be useful in addressing some kinds of anti-competitive behavior in the digital sphere.²⁵ The authors of the German study also suggest making Section 20 GWB “an effective instrument for closing persisting gaps in controlling abusive behavior in view of the special challenges facing the digital economy” by lifting the current limitation of the intervention to the protection of small and medium-sized enterprises.²⁶

This shows that the Bundeskartellamt’s abuse proceeding against Amazon is not limited to one specific practice, but rather targets a whole array of business and related practices from different competition policy angles. Specifically, the practices are the following: first, liability provisions to the disadvantage of sellers in combination with choice of law and jurisdiction clauses; second, rules on product reviews; third, the non-transparent termination and blocking of sellers’ accounts; fourth, withholding or delaying payments; fifth, clauses assigning rights to use the information material which a seller has to provide with regard to the products offered; finally, terms of trade on pan-European despatch.

As mentioned before, these practices could be addressed by the Bundeskartellamt both under abuse of dominance and abuse of relative market power provisions. As to the abuse of dominance, this could be both of the exclusionary and the exploitative kind. For instance, the second practice investigated by the German competition authority related to the rules on product reviews, could point to a possible exclusionary abuse similar to Google’s investigation into “scraping” practices mentioned above, while other practices of Amazon could be more of a data-related exploitative kind in line with the Bundeskartellamt’s still current abuse proceeding against Facebook.²⁷ The latter might show similarities in particular with what the Bundeskartellamt rather cryptically describes as “clauses assigning rights to use the information material which a seller has to provide with regard to the products offered.”

IV. CONCLUSION

The current phase of the digital economy might well resemble a jungle, or a rain forest, in which the big trees seem to grab most of the light. At a minimum, to avoid the use of axe and saw, the big trees should let through a sufficient amount of light. The challenge for competition authorities here is to have a clear understanding of what life on the ground needs to survive and flourish, and to apply the tools that are suitable for preserving a healthy environment. In this respect, the Amazon investigations could show the benefits of an integrated organic approach to ensure a sustainable ecosystem.

23 “Gesetz gegen Wettbewerbsbeschränkungen” = “Act against Restraints of Competition” (German Competition Law).

24 H. Schweitzer, J. Haucap, W. Kerber & R. Welker, “Modernisierung der Missbrauchsaufsicht für marktmächtige Unternehmen,” Studie für das Bundesministerium für Wirtschaft und Energie, 2018 <https://www.bmwi.de/Redaktion/DE/Publikationen/Wirtschaft/modernisierung-der-missbrauchsaufsicht-fuer-marktmaechtige-unternehmen.html>.

25 *Ibid.*, p. 47 ss.

26 H. Schweitzer, J. Haucap, W. Kerber & R. Welker, “Modernising the law on abuse of market power,” Executive Summary, 2018, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3250742, p.1. See also R. Podszun, “How to Reform the Law on Abusive Practices: The study that will serve as a basis for reform in Germany (and Europe?),” in: Competition Policy International, 2018, p. 3. <https://www.competitionpolicyinternational.com/wp-content/uploads/2018/09/Europe-Column-September-2018-Full.pdf>.

27 *Supra* note 7.

WITH UNCERTAIN DAMAGE THEORY COME UNPREDICTABLE EFFECTS OF REMEDIES: “*LIBRES PROPOS*” ON THE *ANDROID* CASE



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NO MOLLY-CODDLING HERE

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I. INTRODUCTION

In its July 18, 2018 decision, the European Commission fined Alphabet €4.34 billion for abuse of a dominant position on the mobile operating systems (“MOS”) market.² This decision, which is part of a broader framework of three proceedings initiated by the Commission against Alphabet,³ is based on three practices sanctioned under Article 102 TFEU: the tying of Google’s search and browser apps to Android; payments conditional on the exclusive pre-installation of Google Search; and the obstruction of the development and distribution of third-party MOSs based on the free Android core (“*Android forks*”).

In its decision, the Commission also included behavioral injunctions requiring Alphabet to put an end to the targeted behavior, i.e. the pre-installation of applications such as Google Search, Chrome, or Play Store, on the one hand, and its restrictions on the development of derived MOS, i.e. its anti-fragmentation clauses, on the other hand.

To some extent, the present decision is surprising. On April 3, 2013, Google offered first commitments, revised in 2014 on the basis of a market test implemented by the Commission,⁴ at the end of which Commissioner Almunia expressed his satisfaction with the ongoing negotiations.⁵ A negotiated settlement, as Article 9 of European Regulation 1/2003 provides, was highly probable. Instead, Commissioner Vestager’s statement of April 15, 2015⁶ asserted Commission’s unilateral power to revert to a contentious decision under Section 2 of Article 9.⁷

Our purpose is to consider only the second of this 3 act play (coming after the June 2017 *Google Shopping* decision and before the still expected *AdWords* one), which has already been highly commented, both because of the record fine imposed to Alphabet and the tense political context between U.S. and EU authorities. Our analysis will be limited to the economic aspects of the decision, especially because (1) the boundaries of past, present, and future relevant markets are unclear and shifting; (2) the long-term damage to the economy is uncertain; and (3) the impact of the remedies on competition and consumers is also uncertain.

Thus, the question, read from the perspective of the industrial economy and strategy, is similar to that of *Antitrust Modesty*:⁸ in a context of uncertainty, what are the risks that antitrust remedies will *ultimately* prove ineffective or even counterproductive in terms of consumer welfare and innovation dynamics, as Theodore Roosevelt stated in his nomination speech for the nomination of the American Progressive Party in 1912?⁹ This is the question we are trying to answer with economic arguments.

2 European Commission press release IP/18/4581 of July 18, 2018, case 40099.

3 This case follows a first fine of €2.42 billion in June 2017 for exclusionary abuse in the price comparison market (European Commission press release IP/17/1784 of June 27, 2017, case 39740). A third proceeding is ongoing relative to its behavior in the online advertising market by “artificially restricting the possibility of third party websites to display search advertisements from Google’s competitors” (European Commission, press release IP/16/2532 of July 14, 2016, case 40411).

4 European Commission, Memo of February 5, 2014.

5 “To sum up, the concessions we extracted from Google in this case are far-reaching and have the clear potential to restore a level playing-field in the important markets of online search and advertising. No antitrust authority in the world has obtained such concessions. [...] Moreover, these commitments are forward-looking and enforceable. They would ensure competitive conditions are guaranteed for the years to come. I am convinced this would help avoiding that in this fast-evolving sector the problems we’ve seen in the past are repeated in the future” (European Commission, Press conference, February 5, 2014).

6 “The Commission’s objective is to apply EU antitrust rules to ensure that companies operating in Europe, wherever they may be based, do not artificially deny European consumers as wide a choice as possible or stifle innovation” (European Commission, Press release, IP/15/4780, April 15, 2015).

7 “The Commission may, upon request or on its own initiative, reopen the proceedings: (a) where there has been a material change in any of the facts on which the decision was based; (b) where the undertakings concerned act contrary to their commitments; or (c) where the decision was based on incomplete, incorrect or misleading information provided by the parties.”

8 Daniel Crane (2007), “Antitrust Modesty (Review Essay),” *Michigan Law Review*, Michigan volume. 105, April, pp.1193-1212.

9 “[Antitrust] has occasionally done good, has usually accomplished nothing, has generally left the worst conditions wholly unchanged, and has been responsible for a considerable amount of downright and positive evil.”

II. THE DEFINITION OF THE RELEVANT MARKET

The relevant market for a given good or service is defined at the crossroad of the *product market* and the *geographic market*. It therefore encompasses all substitutable goods and services (in terms of price and quality) traded in a specific catchment area. The various economic tests used to define it¹⁰ aim to avoid antitrust *gerrymandering* practices.¹¹ In this case, the *product market* is particularly hard to define as it combines both (A) the MOS market and (B) the App store market.

A. The Mobile Operating Systems Market

At the relevant time, the competitive landscape in the MOS market can be summed up as iOS (Apple), Blackberry OS, Android, Windows 10 Mobile, and plenty of relatively confidential MOSs, sometimes *open source*, including *Android forks*. However, the Commission has decided to exclude the first two MOSs mentioned from the scope of the relevant market as they cannot be acquired independently of Apple or Blackberry branded devices. The relevant product market *ultimately* selected by the Commission is therefore that of MOSs available for licenses in which Google has a market share of more than 95 percent.

In the economist's view, the Commission has not so much chosen to distinguish the market according to the characteristics of the product¹² as to distinguish two distinct market strategies: closed vertical integration and licensing. While the first strategy is to control the entire value chain by jointly selling branded smartphones and a proprietary MOS (and often in-house applications and software), the second strategy is to sell the MOS to as many smartphone manufacturers as possible. Under that rationale, since Apple does not seek to sell its MOS to third party manufacturers, it cannot be considered a competitor of Google.

Such an approach is nevertheless surprising since the Commission seems to only consider the B2B dimension of the market. But, there are indisputable substitution effects on its B2C part where, through renewals, it is not uncommon for an iPhone user to choose a smartphone running on Android, and *vice versa*.¹³ In the *device market*, which is the one that allows MOSs to be broadcast, competition is a reality. Thus, while Android is clearly the dominant MOS (even in the broadest market definition), there is no guarantee that Google has real market power that it could abuse. It should be recalled that dominance in itself cannot be sanctioned,¹⁴ unless dominant companies are given particular responsibilities for the preservation of effective competition.¹⁵

Another concern lies in the fact that, according to *Microsoft*,¹⁶ the MOS generates little value by itself. It is its coupling with third-party functionalities, software, and applications that makes this possible. Such a complete and attractive ecosystem allows the MOS operator to capture a lot of user data (in order to improve its own products and/or to resale the data to third parties) and to control a valuable distribution channel to end users: the app store.

B. The App Store Market

To reach end users, app developers have two options: either self-distribute or use the MOS's app store. In its decision, the Commission states that more than 90 percent of apps are distributed through this second channel. This is relevant with the consumer's propensity to favor the most cost-effective solutions. Because it concentrates most of the supply, an app store has the advantage of exhaustiveness where searching for apps directly on developers' sites (when the capacity is known by the consumer) entails certain transaction costs.

10 Daniel Crane (2014), "Market Power Without Market Definition," *Notre Dame Law Review*, volume 90, issue 1, pp.31-80.

11 Nicolas Petit, "EU engaged in antitrust gerrymandering against Google," *The Hill*, July 31, 2018.

12 However, it points out that consumers' purchasing decisions take more into account the characteristics of the smartphone than those of the MOS and that, given the different positioning options, only high-end Android smartphones are substitutable for iPhone.

13 Thus, the European Commission seems to consider that the lack of interoperability between the two MOSs is likely to generate *switching costs* such that they freeze companies' market shares.

14 Thibault Schrepel, "Les positions dominantes bientôt sanctionnées," *La Semaine Juridique - Entreprises et Affaires*, n° 46, November 15, 2018, pp.34-39.

15 Peter Behrens (2006), "Controlling Dominance or Protecting Competition: From Individual Abuses to Responsibility for Competition," in Hanns Ullrich (ed.), *The Evolution of European Competition Law: Whose Regulation, Which Competition?*, Edward Elgar, 224-232.

16 Case COMP/C-3/37.792, *Microsoft v. European Commission*.

However, Google secured the presence of its own app store (“*Play Store*”) on Android devices through tying and bundling practices.¹⁷ Such practices can distort competition in creating a *status quo bias*. Customers natively equipped with mobile phone services have indeed few incentives to download competing offers (if any).

Again, the resemblance to the *Microsoft* case is striking.¹⁸ But, a difference remains: there is no substitute for *Play Store*. *Apple’s App Store* is reserved for iPhone users and self-distribution is a too confidential practice to compete credibly. Thus, *Play Store* is a *must have* both for end users and suppliers (manufacturers and app developers). Such a situation gives Alphabet significant market power, raising concerns about abusive pricing and technical conditions to access *Play Store*. The Commission incidentally suggests that “Google achieves billions of dollars in annual revenues with the Google Play Store alone.”¹⁹

But domination is not abuse. For a third-party developer, on which app store distributes its products is not a binary question. Despite higher development costs, in most cases third parties’ apps are available both on the *Play Store* and the *App Store*, especially because exclusive distribution would deprive them from a significant part of the market.²⁰ Moreover, when *Play Store* offers the best volume prospects, *App Store* generates the best revenue per user. For this reason, Google’s market power via *Play Store* should have been compared with the market power Apple has over developers distributing their solutions also on *App Store*... which would have been achieved with a broader definition of the relevant market than the one adopted by the Commission. Again, the mere fact of holding a quasi-monopoly cannot characterize an abuse of dominance. Nor does it presuppose any damage to the economy.

III. THE DAMAGE THEORY

The damage theory in *Android* looks very classic. The tying between a *system good* (the MOS) and *complementary goods* (browsers and search services) would both foreclose competitors from the *tyed market*, and lock the dominant position on the *primary market*. Such a practice would strengthen Google’s market power in the two related markets, but could also lessen innovation and thus restrict consumers’ freedom of choice.

However, the damage theory becomes much more complex to establish when the specific Android’s development model is considered. It is indeed necessary to distinguish (A) the constraints relative to the business model, from (B) behaviours that would be part of an intentional eviction strategy on the *fork* market.

A. Economics of Two-sided Markets

Since its launch in 2007, the Android code is freely accessible to third parties. This open architecture is both the mean to fill the gap with the first mover (Apple), and to differentiate from it. Free access certainly hastened Android’s adoption by third parties (manufacturers, app developers, etc.). It also raises Google’s costs (mainly development and maintenance costs) as well. Revenues flowing from ancillary activities have to overcome the abovementioned costs.

In such two-sided markets, free access to Android only makes sense if Google can meanwhile widely offer extra services (Google Search, Google Maps, etc.) financed by advertising. Thus, the pre-installation of Google’s services could be defended on the basis of upstream investments protection, while the incentives paid to manufacturers could be interpreted as an indirect form of redistribution of the value generated globally. Hence, the damage theory can only rest on the foreclosure of the MOS market that would be introduced by the anti-fragmentation clauses implemented by Google.

17 According to the Commission, “Google offers its mobile apps and services to device manufacturers as a bundle, which includes the Google Play Store, the Google Search app and the Google Chrome browser. Google’s licensing conditions make it impossible for manufacturers to pre-install some apps but not others.” Interestingly, those apps are essential to the Google business model based on the exploitation of users’ data.

18 Microsoft had been fined for similar tying practices between Windows (its PC operating system) and its own web browser (Internet Explorer). Then, the Commission enjoined Microsoft to implement a *ballet box* offering users a full range of alternative Internet browsers.

19 European Commission press release IP/18/4581 of July 18, 2018, case 40099.

20 Since consumers are mostly *single-homing*, app developers have no other choice than following a *multi-homing* strategy. While the MOS owner acts as *gatekeeper*, it may be rational for it to indirectly subsidize the developer activities by the end-users, or advertisers. See Mark Armstrong & Julian Wright (2007), “Two-Sided Markets, Competitive Bottlenecks, and Exclusive Contracts,” *Economic Theory*, volume 32, issue 2, pp.353-380; Jean-Charles Rochet & Jean Tirole (2003), “Platform Competition in Two-Sided Markets,” *Journal of European Economic Association*, volume 1, pp.990-1029.

B. What is the Economic Rationale of Anti-fragmentation Clauses?

Anti-fragmentation clauses could be interpreted in two ways, which must be balanced: (1) it can be seen as the natural consequence of Android's open architecture, or (2) as a means of preventing the market entry of competing MOS ("fork").

1. Anti-fragmentation clauses as a guarantee of quality and cost control?

The uncontrolled development of *forks* could raise quality issues in terms of user experience, compatibility between different applications, and security in terms of personal data protection. Open architecture imposes *standardization* constraints to preserve interoperability especially since, unlike Apple, Android devices are produced by various manufacturers. A fragmentation of the *Android* ecosystem could make Google's investments less profitable and have negative effects in terms of quality of service and devices' security. In this way, anti-fragmentation clauses benefit Google, as well as end users and third-party developers.

2. Anti-fragmentation clauses as foreclosure means?

In contrast, anti-fragmentation clauses can be analyzed under the foreclosure perspective. In this way, Android would be an *essential facility* whose control could grant a vertically integrated company the undue capacity to favor its own complementary goods, and gradually exclude competitors from the market. This raises the question of the relationship between digital leaders and their *complementors*.²¹ The growth of the former would thus define *kill zones*, within their own ecosystems, putting the latter in an uneven position.²² They could take advantage from the *gatekeeping* role, but also from resources asymmetries, to detect, imitate, or even buy successful or threatening solutions.

In this case, Android is not a mere technical platform, but the *catalyst* for a large innovation system. Third-party developers are therefore both suppliers and customers of Google since they use *Play Store* to reach end users, but also rely on Android to develop and operate their apps. Google provides third-party developers with the *boundaries resources*²³ necessary to co-construct an attractive ecosystem for all stakeholders. In addition to generating network effects, this strategy has the advantage of ensuring interoperability and product accounting, and reducing entry and development costs.

But these *boundaries resources* raise concerns about competition on the market. A vertically integrated lead producer could use them to extend its dominant position from the MOS market to the most lucrative or promising related ones.²⁴ Especially since the MOS is both a two-sided market in which competition is only based on quality,²⁵ and a distribution *bottleneck*. If so, complementors would bear most of the risks²⁶ and Google could abuse such strategic dependence to impose unfair restrictions.

Thus, the *Android* decision suggests that anti-fragmentation rules would have harmed consumers, not in terms of price,²⁷ but in stifling third parties' incentives to innovate in the MOS market. It is therefore *damage to innovation* that can be characterized here. But then, two elements deserve to be discussed:

1. Unlike in *Microsoft*, Google does not seek to extend its dominant position from a monopolized market to markets that are still competitive.

21 Simonetta Vezzoso (2018), "Open Digital Platforms and Antitrust: A more Technological Approach," in Budzinski & Haucap, eds, *Recht und Ökonomie*, forthcoming.

22 The notion of *kill zone* would come from Microsoft's practices in the 1990s, "embrace, extend and extinguish," which aimed to neutralize any potential threat to its core business. See Noah Smith, "Big Tech Sets Up a 'Kill Zone' for Industry Upstarts," *Bloomberg Opinion*, November 7, 2018.

23 Intellectual property, *open source* licenses, data, software development kits, API, etc. See Ben Eaton, Sylvia Elauf-Calderwood, Carsten Sørensen & Youngjin Yoo (2015), "Distributed tuning of boundary resources: the case of Apple's iOS service system," *MIS Quarterly*, 39(1), pp.217-243.

24 See Thomas Eisenmann, Geoffrey Parker & Marshall Van Alstyne (2011), "Platforms Envelopment," *Strategic Management Journal*, 32(12), pp.1270-1285; Feng Zhu & Qihong Liu (2018), "Competing with Complementors: An Empirical Look at Amazon.com," *Harvard Business School Technology & Operations Mgt. Unit Working Paper* n°15-044.

25 Damien Geradin (2018), "What should EU competition policy do to address the concerns raised by digital platforms' market power," *Contribution to the European Commission's Inquiry on "Shaping Competition Policy in the Era of Digitalisation"*, <https://ssrn.com/abstract=3257967>.

26 In particular that of *swimming with sharks*. See Luis Diestre & Nandini Rajagopalan (2012), "Are all sharks dangerous? New biotechnology venture and partner selection in R&D alliances," *Strategic Management Journal*, volume 33, n°10, pp.1115-1134. This risk is strengthened by the lack of reliable alternative, and low - and sometimes voluntarily reduced - interoperability between MOSs. See Feng Zhu & Marco Iansiti (2012), "Entry into Platform-based Markets," *Strategic Management Journal*, volume 33, issue 1, pp.88-106.

27 As free access (and then, lower prices for devices) is the counterpart for accepting the terms of use (access to personal data included), consumers are assumed *a priori* to have a surplus from the operation, without which they would not give their consent.

Here, both are already dominated. Does the Commission sanction the practice of cross-reinforcing the two dominances?

2. Pre-installation is not exclusive. Users keep the freedom to customize their environment, and manufacturers can install a software overlay. In addition, self-distribution of applications is possible, which limits the unavoidable nature of *Play Store*. Therefore, how effective is the present tying practice?

IV. DISCUSSION ON REMEDIES

If properly designed and implemented, remedies based on a robust damage theory can restore free and fair competition. They can otherwise lead to unwanted and potentially adverse effects for consumers. Symmetrically, they can be ineffective when they arrive too late on a market that is already no longer contestable. Thus, it is necessary (A) to consider the remedies proposed by Google in October, and (B) to discuss how likely these could restore effective competition.

A. The Main Competitive Remedies Offered by Google

To comply with the Commission's injunctions, Google proposed a set of remedies, including:

- Disjoint distribution of Google Play's Search and Chrome applications;
- Disjoint and non-exclusive distribution of free licenses for Search and Chrome;
- Full licensing for Google Play and 8 other services (including Gmail, Google Maps...), with price discrimination regarding the range of the device. The end of free access is intended to compensate the loss of the *two-sided effect* described above.
- Removal of anti-fragmentation clauses. Then, manufacturers will be able to develop devices running on *Android fork*, as long as they inform consumers about the potential lack of compatibility with apps developed for the official MOS.

B. How Effective are the Remedies?

As described above, in an industry characterized by network effects, a near-irreversible ultra-dominance can occur. Unless there is a major technological breakthrough, no new entrant can offer services as efficient as the leader's. Thus, the question of the remedies' effectiveness is inseparable from the question of the unavoidable nature of Android. On the one hand, Android cannot be seen as an *essential facility* since no practice of refusal to supply can be alleged in this case. On the other hand, we saw that Android is a *must have* for most users and developers. In asking Google to put in place a "fair, reasonable and objective system to ensure the correct functioning of Android devices using Google proprietary apps and services, without however affecting device manufacturers' freedom to produce devices based on Android forks," the Commission seems to attest Android's *essential* nature.²⁸

This would then make Android a *de facto* standard, and Alphabet a *gatekeeper* subject to special responsibilities to preserve effective competition. As such, it must ensure free access to the market, including to rivals offering services that it may develop later or even *disrupt* one of the markets in which it competes.

But, if the remedies succeed in creating a *level playing field* Google's effective and potential rivals could benefit from, the net effect on consumer welfare remains uncertain. In some circumstances, anti-fragmentation rules might be proven efficient.²⁹ Such rules can facilitate the emergence of a complete ecosystem, co-built with partners, characterized by strong network effects,³⁰ lower barriers to entry, and reduced

28 High barriers to entry are another way to assess the essential nature of Android. "There are high barriers to entry in part due to network effects: the more users use a smart mobile operating system, the more developers write apps for that system – which in turn attracts more users. Furthermore, significant resources are required to develop a successful licensable smart mobile operating system." Press release of July 18, 2018, IP/18/4581.

29 See Paul Belleflamme & Martin Peitz (2010), *Industrial Organization: Markets and Strategies*, Cambridge University Press; Dirk Auer, Geoffrey Manne, Aurélien Portuese & Thibault Schrepel (2018), "Why Sound Law and Economics Should Guide Competition Policy in the Digital Economy," *Contribution of the ICLE to the European Commission's Inquiry on "Shaping Competition Policy in the Era of Digitalisation."*

30 Volker Nocke, Martin Peitz & Konrad Stahl (2007), "Platform Ownership," *Journal of European Economic Association*, volume 5, pp.1130-1160.

innovation costs and risks.³¹

In a nutshell, not only are anti-fragmentation rules essential to Android's business model, but they also ensure compatibility and align users' and developers' preferences. If the *fork's* interoperability is not ensured, then developers would have to make platform choices. Fragmentation could then shrink positive externalities coming from the dominance of a single platform.³²

Additionally, it is also necessary to assess the effectiveness of the remedies from a dynamic perspective, taking into account how Google will adjust its strategy in the future. Two questions have to be asked:

1. Can the remedies encourage Google to take a major technological leap forward? Let's not forget that Android is already more than ten years old, and that projects for new operating systems, with a greater emphasis on artificial intelligence, are already well advanced. In such a case, the remedies would become ineffective.
2. Can the remedies incite Google to question Android's open model? Such a strategic shift could lead to higher prices in the device market, and will probably encourage Google to vertically integrate as Apple does. It is however worth repeating that the current system allows end users to change their devices without changing the MOS, and avoiding any risk of quality or compatibility loss.

V. CONCLUSION

It appears, ultimately, that the *gatekeeper* could take advantage of its strategic position to hinder present and future competition. In the present case, not only are the market boundaries moving and uncertain, but the damage theory is unclear and the question of the proposed remedies' effectiveness remains fully open. This work calls for four concluding remarks concerning the economic tests to be applied in such cases:

1. In markets characterized by free access, excessive pricing tests should be completed by other excessive conditions, for example in terms of data capture.
2. Access conditions to data collected through the MOS and app stores should be assessed, as they may exclude potential rivals or put complementors in a situation of strong strategic dependence.
3. *Damage to innovation* is more likely to occur when the gatekeeper is also able to control the technological dynamics.³³
4. Finally, it is necessary to clarify the economic criteria on which the damage theory is based. Should we assess a *regulatory damage*³⁴ or still limit the analysis to the assessment of a *welfare damage*?³⁵ In two-sided markets with strong network effects, the damage to innovation risk has to be considered carefully.

31 "By providing efficient matching or development kits, such platforms have also significantly lowered the barriers for many small firms or individuals to innovate and to market their products and services." See Wen Wen & Feng Zhu (2017), "Threat of Platform-Owner Entry and Complementor Responses: Evidence from the Mobile App Mark," *Harvard Business School Working Paper* n°18-036, October.

32 Simonetta Vezzoso (2018), "Android and Forking Restrictions; on the Hidden Closeness of 'Open,'" *mimeo*.

33 Damien Geradin (2018), *op. cit.*

34 Thomas Nachbar (2013), "The Antitrust Constitution," *Iowa Law Review*, volume 99, pp.57-114.

35 Dirk Auer and al. (2018) *op. cit.*

STRUCTURALIST INNOVATION: A SHAKY LEGAL PRESUMPTION IN NEED OF AN OVERHAUL

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I. INTRODUCTION

How does a market's structure affect innovation? This crucial question has occupied the world's brightest economists for almost a century, from Schumpeter who found that monopoly was optimal,² through Arrow who concluded that competitive market structures were key,³ to the endogenous growth scholars who empirically derived an inverted-U relationship between market concentration and innovation.⁴ Despite these pioneering contributions to our understanding of competition and innovation, if the past century of innovation economics has taught us anything it is that no market structure is strictly superior at generating innovation. Just as the SCP paradigm ultimately faltered because structural presumptions were a weak predictor of market outcomes,⁵ so too have dreams of divining the optimal market structure for innovation.⁶ Instead, in any given case, the right market structure likely depends on a plethora of sector- and firm-specific characteristics that range from the size and riskiness of innovation-related investments to the appropriability mechanisms used by firms, regulatory compliance costs, and the rate of technological change, among many others.

Against this backdrop, it may come as a surprise that the European Commission believes it has cracked the innovation market structure conundrum. Throughout its recent competition decisions, the Commission has almost systematically concluded that more firms in any given market will produce greater choice and more innovation for consumers.⁷ I call this the "Structuralist Innovation Presumption." Notably, this presumption seems to have played a pivotal role in the recent *Google Android* decision (although the text of the Commission's decision is not yet publicly available).⁸

In what follows I argue that the Structuralist Innovation Presumption is a misguided heuristic that antitrust authorities around the globe would do well to avoid. Although it has been almost unequivocally endorsed by the European Commission, the presumption is at odds with the mainstream economics of innovation.⁹ To make matters worse, structuralist innovation also ignores the complex second-order effects that may arise when antitrust intervention tampers with rapidly evolving markets.

II. "STRUCTURALIST INNOVATION" AND EUROPEAN COMPETITION LAW

The concept of structuralist innovation is best illustrated in a recent speech, given by European Commissioner for Competition Margrethe Vestager. Speaking of the *Google Shopping* case, she surmised that "[Google's Behavior] got in the way of the competition that drives innovation forward. . . . [B]y making sure these markets are open for competition, our decision will help innovation to thrive."¹⁰ Her conclusion is clear: More competition on the market leads to more innovation.

2 See J.A. SCHUMPETER, *CAPITALISM, SOCIALISM AND DEMOCRACY* 72 (1976).

3 See Kenneth Arrow, *Economic Welfare and the Allocation of Resources for Invention*, in *THE RATE AND DIRECTION OF INVENTIVE ACTIVITY: ECONOMIC AND SOCIAL FACTORS* 620 (Richard R. Nelson ed., 1962).

4 See, e.g. Philippe Aghion, Nick Bloom, Richard Blundell, Rachel Griffith & Peter Howitt, *Competition and Innovation: An Inverted-U Relationship*, 120 Q. J. ECON. 702 (2005).

5 See generally *INDUSTRIAL CONCENTRATION: THE NEW LEARNING* (Harvey J. Goldschmid, H. Michael Mann, and J. Fred Weston eds., 1974), and see especially Harold Demsetz, *Two Systems of Belief About Monopoly*, in *id.* at 164-184. See also Sam Peltzman, *The Gains and Losses from Industrial Concentration*, 20 J. L. & ECON. 229 (1977); Yale Brozen, *The Concentration-Collusion Doctrine*, 46 ANTITRUST L. J. 826 (1978).

6 See, e.g. Michael L. Katz & Howard A. Shelanski, *Mergers and Innovation*, 74 ANTITRUST L. J. 1, 22 (2007) ("The literature addressing how market structure affects innovation (and vice versa) in the end reveals an ambiguous relationship in which factors unrelated to competition play an important role.").

7 These cases are discussed throughout Section 2 of this paper, *infra* at p. 2, ff.

8 *Infra* note 19.

9 This is not to say that some economists do not believe that more competitive market structures generally lead to more innovation. But rather that these writings have (i) not garnered a wide consensus among the economics profession, and (ii) often rest on narrow assumptions that reduce their application to specific settings. See, e.g. Carl Shapiro, *Competition and Innovation: Did Arrow Hit the Bull's Eye?*, in *THE RATE AND DIRECTION OF INVENTIVE ACTIVITY REVISITED* 400 (Josh Lerner and Scott Stern eds., 2011). See also Ilya Segal & Michael D. Whinston, *Antitrust in Innovative Industries*, 97 AM. ECON. REV. 1712 (2007). For instance, both of the above papers conclude that exclusivity, though it may increase innovator's *ex-post* profits, is unlikely to increase incentives to innovate because it prevents entry by more innovative rivals. To reach this conclusion, the authors notably assume that consumers that are bound by exclusivity contracts never find it profitable to purchase the innovation of a second firm (they assume the innovation costs more to produce than the value to consumers of its incremental improvement). There is no reason to believe that this is, or is not, a good reflection of reality.

10 See Speech by Margrethe Vestager, "Clearing the path for innovation," Lisbon Web Summit (Nov. 7, 2017), available at https://ec.europa.eu/commission/commissioners/2014-2019/vestager/announcements/clearing-path-innovation_en.

In the *Google Shopping* decision, the Commission found that Google's conduct decreased both its own and its rivals' incentives to innovate. It notably concluded that "the conduct is likely to reduce the incentives of Google to improve the quality of its comparison shopping service as it does not currently need to compete on the merits with competing comparison shopping services."¹¹ The implication is clear: Google would innovate only if it faced competition from rivals within the market (in this case, the market for comparison shopping services). The Commission thus excludes the possibility that "for the market" competition or competition from firms outside the relevant market would provide sufficient incentives to innovate in the market for comparison shopping.

Commissioner Vestager did not conjure her words, nor the Commission's *Google Shopping* decision, out of thin air. Indeed, the idea that competitive market structures lead to innovation has long been a mantra of the European Commission in its competition decisions. In *Microsoft*, for example, the Commission found that Microsoft's refusal to supply interoperability information to downstream rivals would limit technical development because "new products other than Microsoft's work group server operating systems will be confined to niche existences or not be viable at all. There will be little scope for innovation – except possibly for innovation coming from Microsoft."¹² Although adduced without evidence, the Commission's message is clear: Product market competition and diversity inevitably lead to more and better innovation than if a single firm is left to itself.

The Commission adopted the same assumption in the *Groupement des Cartes Bancaires* decision.¹³ In *Cartes Bancaires* the Commission determined that a set of measures put in place by members of a payment card network would reduce the entry of new firms into the network. In the Commission's own words, this had the effect of "stifling innovation (in so far as new entrants would have supplied cards with new functions)."¹⁴ Yet the Commission provided no additional evidence to support the claim that entrants would have provided new products and services (nor, *a fortiori*, what those new products and services would be or whether they would be particularly innovative or successful).

Similarly, in *Intel*, the Commission found that innovation was harmed because potentially more efficient rivals had been foreclosed and could therefore not provide innovative products.¹⁵ The Commission further noted that Intel's behavior deprived "AMD and its investors of a return on their research and development investments which would have been proportionate to the success of their inventions."¹⁶ The decision does not discuss whether AMD's innovations would have been superior to Intel's, nor does it present any evidence to suggest that pressure from AMD would have increased innovation by Intel. In fact, empirical research produced after the decision suggests that the presence of competitors, such as AMD, may actually *decrease* innovation in the microprocessor industry.¹⁷ The list of Commission decisions goes on...¹⁸

Most recently, the structuralist innovation theory appears to have had a significant influence over the Commission's *Google Android* decision. The Commission's press release notes that "[t]his practice reduced the opportunity for devices running on Android forks to be developed and sold. . . . Therefore, Google's conduct has had a direct impact on users, denying them access to further innovation and smart mobile devices based on alternative versions of the Android operating system."¹⁹

The commonality between these decisions is readily apparent. The Commission assumes that reducing the number of rival firms in a market will, by the same token, also harm innovation. Moreover, the Commission rationalizes these conclusions with broad, ideologically-driven statements, rather than detailed assessments of the underlying market realities in each case. In short, according to the Commission's decisions, it is systematically the case that fewer firms in a market will produce less innovation, to the detriment of consumers.

11 See Commission Decision No. AT.39740 (*Google Search (Shopping)*), C(2017) 4444 final, slip. op., §594-595 (June 27, 2017). The Commission also found that "competing comparison shopping services will have an incentive to invest in developing innovative services [...] only if they can reasonably expect that their services will be able to attract a sufficient volume of user traffic to compete with Google's comparison shopping service."

12 See Commission Decision No. COMP. 37792 (*Microsoft*), C(2014) 900 final, slip. op., §700 (March 24, 2004).

13 See Commission Decision No. COMP.38606 (*Groupement des Cartes Bancaires "CB"*) 2001 OJ. L. 162/21.

14 *Id.* at §476.

15 See Commission Decision No. COMP. 37990 (*Intel*), D(2009) 3726 final, slip. op., §1612 (May 13, 2007).

16 *Id.* at §1614.

17 See Ronald L. Goettler & Brett R. Gordon, *Does AMD Spur Intel to Innovate More?*, 119 J. Pol. Econ. 1141 (2011).

18 See, e.g. Commission Decision No. COMP. 39525 (*Telekomunikacja Polska*), slip. op. (June 22, 2011), §830 & 902; Commission Decision No. AT. 39523 (*Slovak Telekom*), C(2014) 7465 final, slip. op. (October 15, 2014), §1053.

19 See European Commission, "Antitrust: Commission fines Google €4.34 billion for illegal practices regarding Android mobile devices to strengthen dominance of Google's search engine," (Jul. 18, 2018), available at http://europa.eu/rapid/press-release_IP-18-4581_en.htm.

III. A PRESUMPTION AT ODDS WITH ECONOMIC SCIENCE

Some readers may be asking... So what is the big deal? Is it not obvious that more competition and greater diversity leads to more innovation? The answer to this question hinges on a crucial distinction between competition *for the market* and competition *in the market*.

On some basic level, the idea that competition is a key driver of innovation is undoubtedly true. Ever since the writings of Schumpeter, it has been uncontroversial that competition to attract consumers may spur firms to innovate. In this light, the invention of the automobile can be seen as a competitive response to horses; consumer air travel initially vied for the same consumers that used trains and boats; etc. As Schumpeter wisely observed, this type of creative destruction is not necessarily the fruit of old incumbents.²⁰ Instead, it is often down to aspiring firms that seek to displace the incumbent, rather than languish in its shadow.

This vision is one of competition *for the market*, where monopoly power is transitory, and where firms compete to overthrow incumbents, potentially moving industries towards new standards or paradigms in the process.²¹ This is not to say that incumbents cannot also be highly innovative, but rather that (i) entrants do not need to be present in a market before they innovate, or induce innovation by incumbents; and (ii) it is not clear what competition authorities (or entrenched incumbents, for that matter) can do to manage (or prevent) this type of innovation. To take just one of innumerable examples: Blackberry was unable to prevent Apple from disrupting its business, even though Apple had never sold a mobile handset before the iPhone, and Blackberry had a commanding position on the market.²²

Although competition *for the market* is frequently a crucial driver of innovation, it is only tangentially addressed by current antitrust regimes. Instead, these laws tend to focus more heavily on competition within well-defined markets — that is, on competition *in the market*.²³ In that regard, the indicia of competition upon which current antitrust regimes tend to focus may, when considered within the context of innovation, point in the wrong direction. Indeed, whereas competition *for the market* is a key driver of innovation, it does not follow that ever-more competition in each and every market is necessary, or even desirable, to achieve the optimal rate of innovation in an economy. As Harold Demsetz has put it: “Once perfect knowledge of technology and price is abandoned, [competitive intensity] may increase, decrease, or remain unchanged as the number of firms in the market is increased.... [I]t is presumptuous to conclude.... that markets populated by fewer firms perform less well or offer competition that is less intense.”²⁴

In the more circumscribed realm of antitrust law, and competition *in the market*, economists have long fretted over the type of market structure that would be most conducive to the production of innovations. The Schumpeterian view suggests that monopolies are naturally better suited to innovating because they have superior access to capital and, presumably, are not hampered by the free-riding that plagues competing innovators.²⁵ In turn, these monopolies compete against each other to create new markets and disrupt existing ones.²⁶ At the other end of the spectrum, Arrow considered that competitive market structures are indeed necessary for firms to produce the second-best rate of innovation (according to him, markets necessarily produce suboptimal incentives to innovate, prompting a stern rebuttal from Harold Demsetz).²⁷ Taking a more empirical perspective, the endogenous growth scholars have shown that intermediate market structures tend to produce higher rates of innovation, though endogenous factors affect the optimal market structure in any given case, and optimal firm size changes over time.²⁸

20 See J.A. SCHUMPETER, *THE THEORY OF ECONOMIC DEVELOPMENT: AN INQUIRY INTO PROFITS, CAPITAL, CREDIT, INTEREST, AND THE BUSINESS CYCLE* 66 (1934) (“On the contrary, new combinations are, as a rule, embodied, as it were, in new firms which in general do not arise out of the old ones but start producing beside them... in general it is not the owner of stage-coaches who builds railways.”).

21 See, e.g. David J. Teece, *Strategies for Managing Knowledge Assets: The Role of Firm Structure and Industrial Context*, 33 *LONG RANGE PLANNING* 47 (2000).

22 See Vlad Savov, *BlackBerry's Success Led to Its Failure*, *THE VERGE* (Sep. 30, 2016), <https://www.theverge.com/2016/9/30/13119924/blackberry-failure-success>.

23 See William M. Landes & Richard A. Posner, *Market Power in Antitrust Cases*, 94 *HARV. L. REV.* 960 (1981).

24 See Harold Demsetz, *The Intensity and Dimensionality of Competition*, in HAROLD DEMSETZ, *THE ECONOMICS OF THE BUSINESS FIRM: SEVEN CRITICAL COMMENTARIES* 137, 140-41 (1995).

25 See Schumpeter, *supra* note 2, at 72, 91 & 396.

26 See Schumpeter, *supra* note 20, at 66.

27 See Arrow, *supra* note 3, at 620. See also Harold Demsetz, *Information and Efficiency: Another Viewpoint*, 12 *J. L. & ECON.* 19 (1969) (arguing that, under modest changes in assumptions, monopoly is more favorable to innovation and that antitrust law should thus be pursued less diligently).

28 See Aghion et al., *supra* note 4, at 702 (“The essence of the inverted-U relationship between competition and innovation is that the fraction of sectors with neck-and-neck competitors is itself endogenous, and depends upon equilibrium innovation intensities in the different types of sectors.”). See also Robert E. Lucas Jr., *On the Size Distribution of Business Firms*, *BELL J. ECON.* 508 (1978). (showing that average size of firms increases with GDP. This is because a firm’s size is a reflection of economic agents’ ability to manage, and because more advanced economies are better at fostering the human capital necessary to produce good managers.). The upshot is that the relationship between industry concentration and innovation might be expected to veer further towards large firms as economies continue to grow.

Do any of these views support the Commission's Structuralist Innovation Presumption? The answer is clearly no. Take the point of view that is most favorable to the Commission's position. Arrow did indeed suggest that perfectly competitive markets would produce more innovation than monopolies.²⁹ But the story did not stop there. Because the prospect of monopoly profits was necessary to spur these competitors to innovate, Arrow was immediately faced with a time consistency problem. *Ex-ante*, a benevolent social planner would want to give the winning innovator a monopoly over its creation, but *ex-post* the same planner would remove all protections in order to spur further innovation.³⁰ Under Arrow's model, an economy where perfect competition is enforced in every market would produce no innovation whatsoever. Moreover, his model ignores the potential for firms active in different markets to compete against each other and introduce innovations in markets that are yet to be created or in which they don't yet compete. When this is the case, a monopolist (either threatened by entry or vying to enter an unrelated market) will act as a firm in a "competitive" market would, because innovating does not cannibalize its current sales.³¹ In short, promoting innovation is a balancing act that is simply incompatible with the idea that atomistic market structures invariably increase innovation.

IV. APPROPRIABILITY: A MORE SOPHISTICATED TOOL

As soon as the time consistency problem is considered, authorities must contend with a significant challenge. Not only must they seek to protect competition, but they must also ensure that their interventions do not chill innovation by preventing firms from earning a positive expected return on their inventions. Whether firms will be able to do so notably hinges on appropriability – that is, the extent to which an innovator can capture the social benefits of its innovation. The higher the level of appropriability, the more likely a firm is to earn a positive return on its investments in innovation.

The notion of appropriability, at least as is it currently understood, owes a great debt to the works of David Teece. In a seminal paper, Teece showed that appropriability is affected not just by intellectual property but by a wide array of other factors.³² These include the ease with which rivals can copy or reverse-engineer an innovation, whether the knowledge that underpins it is tacit or codified, and whether the innovator owns complementary assets, among others.³³ Teece's work also provides another critical insight: appropriability is not given by nature; instead it is up to firms to shape their business environment so as to earn a return on their inventions.

Firms' attempts to generate appropriability for themselves will inevitably raise competition issues, as protecting their profits will generally imply the exclusion of at least some potential competitors. For example, keeping an innovation secret may prevent a firm's rivals from using the underlying information to compete against it in the market. Likewise, using monopoly power over a complementary good to make an innovation profitable implies that rivals may be excluded from both the monopoly market and the innovation market (the latter because they may not have access to a complementary good in order to generate some appropriability). It is this sort of appropriability through complementary goods that was at stake in the Commission's *Google Android* decision.³⁴

Accordingly, policymakers must decide whether firms should be given some leeway to engage in nominally anticompetitive conduct when this increases appropriability over their innovations, or whether this type of exclusion is solely the domain of intellectual property protection.³⁵ The abundant empirical literature on this topic is unambiguous: Except for some patent-heavy industries like pharmaceutical and chemical goods, intellectual property protection is far from being the most important source of appropriability for innovators.³⁶ Instead, firms tend to rank lead-time and secrecy as being more important than patents. Owning complementary assets is also high on the list of appropriability mechanisms.³⁷

29 See Arrow, *supra* note 3, at 620.

30 *Id.* at 617 (“[I]n a free enterprise economy the profitability of invention requires a nonoptimal allocation of resources.”).

31 The importance of this incremental increase in post-innovation rents, rather than *ex-ante* market structures, was notably stressed by Aghion and his co-authors. See Aghion et al., *supra* note 4, at 702 (“Innovation incentives depend... upon the difference between postinnovation and preinnovation rents of incumbent firms.”).

32 See David J. Teece, *Profiting From Technological Innovation: Implications for Integration, Collaboration, Licensing and Public Policy*, 15 RESEARCH POL'Y 285 (1986).

33 *Id.*

34 See Dirk Auer, *Appropriability and the European Commission's Android Investigation*, 23 COLUM. J. EUR. L. 647 (2017).

35 Even then, they also need to decide when business conduct surrounding IP itself is problematic, most obviously in the context of standard setting organizations and SEPs. See, e.g. Mark A. Lemley & Carl Shapiro, *Patent Holdup and Royalty Stacking*, 85 TEX. L. REV. 1991 (2006).

36 See Edwin Mansfield, *Patents and Innovation: An Empirical Study*, 32 MANAGEMENT SCI. 175-176 (1986). See also Richard C. Levin, Alvin K. Klevorick, Richard R. Nelson, Sidney G. Winter, Richard Gilbert & Zvi Griliches, *Appropriating the Returns From Industrial Research and Development*, 1987 BROOKINGS PAPERS ON ECON. ACTIVITY 797 (1987); Najib Harabi, *Appropriability of Technical Innovations an Empirical Analysis*, 24 RESEARCH POL'Y 981 (1995).

37 See Wesley M. Cohen, Richard R. Nelson & John P. Walsh, *Protecting Their Intellectual Assets: Appropriability Conditions and Why US Manufacturing Firms Patent (Or Not)*, No. w7552 NBER 5 (2000).

The upshot is that, based on our current understanding of economic science, it is impossible to identify a single type of market structure that is strictly superior at producing innovations.³⁸ On the contrary, the optimal setting for innovation depends upon numerous factors, most notably the way in which firms in each industry manage to appropriate the benefits of their innovations. These appropriation strategies will inevitably affect a market's structure. Authorities thus cannot dismiss the possibility that, in some cases at least, tolerating behavior that increases a market's concentration will also foster innovation, because the increased concentration is a direct consequence of firms' appropriability decisions. The Commission's Structuralist Innovation Presumption ignores this complex interplay.

V. THE PROBLEM OF SECOND ORDER EFFECTS: THE *GOOGLE ANDROID* DECISION

Even if the Commission's Structuralist Innovation Presumption was in line with the mainstream economics of innovation – and it is not – it would still likely fail as a heuristic for antitrust decision-making. As Schumpeter famously noted (referring to the notion that competitive market structures produce more innovation): “The conclusions . . . are almost completely false. Yet they follow from observations and theorems that are almost completely true.”³⁹ Schumpeter's point is that the world is infinitely more complex than an economic model, and it is rarely possible for authorities to modify a single parameter of competition without giving rise to complex second-order effects. Unlike economic models, antitrust authorities cannot maintain other things equal when they operate. Once these secondary effects are accounted for, it becomes even more speculative to suggest that atomistic market structures necessarily increase innovation.

Take the European Commission's recent *Google Android* decision.⁴⁰ In a nutshell, the Commission found that Google restricted competition on the market for Android forks and that this reduced innovation from competing forks. Google is notably said to have withheld access to the Play Store App for firms that produced “incompatible” Android forks.⁴¹ I have written elsewhere that Google's behavior might simply have been a way to increase the appropriability of investments in the Android operating system.⁴² But there is another argument to be made against the Commission's decision.

Imagine that the Commission gets its wish, and the Android ecosystem effectively moves from a model where Google's rivals face some limits on the forks they can produce to one where these firms can produce whichever fork they see fit without any penalty from Google. Even if one assumes that more competitive market structures lead to more innovation, and that the Commission's move has effectively made the market for Android forks more competitive, it is still impossible to tell whether innovation will increase as a result.

For instance, naïvely applying basic models of innovation ignores the fact that fragmenting the market for Android forks will undoubtedly have some effect, be it positive or negative, on the incentives of developers to join the Android platform. As things stand, there are roughly the same number of apps on the Google Play Store as there are on Apple's App Store.⁴³ Nothing guarantees that this will still be the case if the Android ecosystem becomes heavily fragmented, however.⁴⁴ In turn, this could have significant ramifications for innovation in the market for forks. Mobile operating systems can be analyzed as two-sided platforms that allow app developers and users to meet.⁴⁵ Reducing the number of

38 See Katz & Shelanski, *supra* note 6, at 14 (“[T]he linkage between *current* concentration and *future* price and output competition and resulting welfare may be weak in some circumstances, notably when there is significant, ongoing innovation. This is so because innovation may be unrelated to the concentration of current sales and may make future market structures hard to predict. In other words, in markets in which innovation is significant, the traditional concentration-competition relationship is on a weaker or more nuanced empirical and theoretical footing than otherwise.”).

39 See Schumpeter, *supra* note 2, at 72.

40 See Commission Press Release, “Antitrust: Commission fines Google €4.34 billion for illegal practices regarding Android mobile devices to strengthen dominance of Google's search engine,” (Jul. 18, 2018), available at http://europa.eu/rapid/press-release_IP-18-4581_en.htm.

41 *Id.* (“Google has prevented device manufacturers from using any alternative version of Android that was not approved by Google (Android forks). In order to be able to pre-install on their devices Google's proprietary apps, including the Play Store and Google Search, manufacturers had to commit not to develop or sell even a single device running on an Android fork.”).

42 See Auer, *supra* note 34, at 647.

43 See *Number of Apps Available in Leading App Stores as of 3rd Quarter 2018*, STATISTA.COM (last visited, Nov. 25, 2018), <https://www.statista.com/statistics/276623/number-of-apps-available-in-leading-app-stores/>.

44 The Android app developer community has decried the Commission's decision for this very reason. See Developers Alliance, “App Developer Letter to the Commission: Don't Undermine Progress!,” available at <https://www.developersalliance.org/open-letter-eu-govt/> (“[E]arly Android was a mess. Because it was open source and many manufacturers were heavily customizing Android, our apps were breaking or not rendering correctly, and we were having to test apps on dozens of devices and rewrite them for all of the “Androids.” . . . Fortunately Google heard this frustration and invested in efforts to harmonize Android.”).

45 See Marc Rysman, *The Economics of Two-Sided Markets*, 23 J. ECON. PERSP. 129 (2009). More generally, see Jean-Charles Rochet & Jean Tirole, *Two-Sided Markets: A Progress Report*, 37 RAND J. ECON. 645 (2006).

developers that produce software for a platform necessarily reduces its attractiveness for users. There is thus a very real risk that fragmenting the Android ecosystem will not lead to more innovation, as the Commission hopes, but that it may instead cause the entire ecosystem to unravel, leaving consumers with even less choice and innovation than is currently the case.⁴⁶

The idea that the Android ecosystem could collapse might seem improbable, but readers need look no further than the market for game consoles for an example of a successful platform disintegrating. It took just two generations of consoles (less than a decade) for Sega to go from producing the highest-selling game console in the U.S. to completely exiting the console market.⁴⁷ Though the causes of its demise are complex, one of Sega's biggest mistakes was releasing its Saturn console without any developer support in the U.S. and European markets.⁴⁸ This gave the upper hand to Sony and its PlayStation, and Sega never recovered. There is little doubt that a highly fragmented Android operating system could readily face this same existential threat.

All of this is not to say that the Android ecosystem is certain to unravel in the wake of the European Commission's decision. Instead, this example merely illustrates that authorities must contend with a series of complex second-order effects before they can conclude that making a market "more competitive" will improve innovation — and, in fact, make the market more competitive. Complex market realities thus further undermine the European Commission's Structuralist Innovation Presumption.

VI. CONCLUDING REMARKS

It is important to understand the limits of the claims discussed here: Just as there is no reason to believe that more-atomistic market structures are systematically more conducive to innovation than concentrated ones, it is equally uncertain that monopolies are necessarily superior. Rather, the crucial point is that a sound reading of economic science calls for meticulous assessments in actual cases to determine whether restrictions on a firms' practices will improve or hamper innovation. Unfortunately, this is contrary to the Commission's practice in its recent decisions. And although this may seem like a daunting task, it is better than the alternative, which is to rely on presumptions that have no basis in either theoretical science or fact.

Policymakers on both sides of the Atlantic are currently in the midst of high-profile hearings to determine how competition law should be applied in the 21st century.⁴⁹ A central theme of these consultations is the question of how antitrust authorities should deal with the fast-moving world of digital platforms, and how they can protect consumers without harming innovation. If these hearings are a sign of things to come, then the interplay between competition law and innovation is set to play an increasing role in future competition proceedings. In that regard, this paper suggests that authorities concerned with safeguarding innovation should at all costs steer clear of naïve heuristics such as the EU's Structuralist Innovation Presumption. Although applying this type of presupposition might initially make enforcers' lives easier, reducing the burden of proof they must meet to show anti-innovative effects would turn successfully prosecuted cases into pyrrhic victories. Intervention risks doing more harm than good by shackling firms' ability to offer consumers the best possible products. A more nuanced approach is thus required.

46 See, e.g. Julian Morris, *The European Commission's Google Android Decision Takes a Mistaken, Ahistorical View of the Smartphone Market*, TRUTH ON THE MARKET (Jul. 23, 2018), <https://truthonthemarket.com/2018/07/23/the-european-commissions-google-android-decision-takes-a-mistaken-ahistorical-view-of-the-smartphone-market/>.

47 See Ryan Lamble, *The Death of Sega's Consoles: History's Warning*, DENOFGEEK (Jan. 29, 2008), available at <https://www.denofgeek.com/games/11565/the-death-of-segas-consoles-historys-warning>.

48 See Keith Stuart, *Sega Saturn: How One Decision Destroyed PlayStation's Greatest Rival*, THE GUARDIAN (May 14, 2015), available at <https://www.theguardian.com/technology/2015/may/14/sega-saturn-how-one-decision-destroyed-playstations-greatest-rival>.

49 See European Commission, "Call for contributions: Shaping competition policy in the era of digitization," (2018), available at <http://ec.europa.eu/competition/scp19/> (last visited Nov. 21, 2018); Federal Trade Commission, "FTC Announces Hearings On Competition and Consumer Protection in the 21st Century" (Jun. 20, 2018), available at <https://www.ftc.gov/news-events/press-releases/2018/06/ftc-announces-hearings-competition-consumer-protection-21st> (last visited Nov. 21, 2018).

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