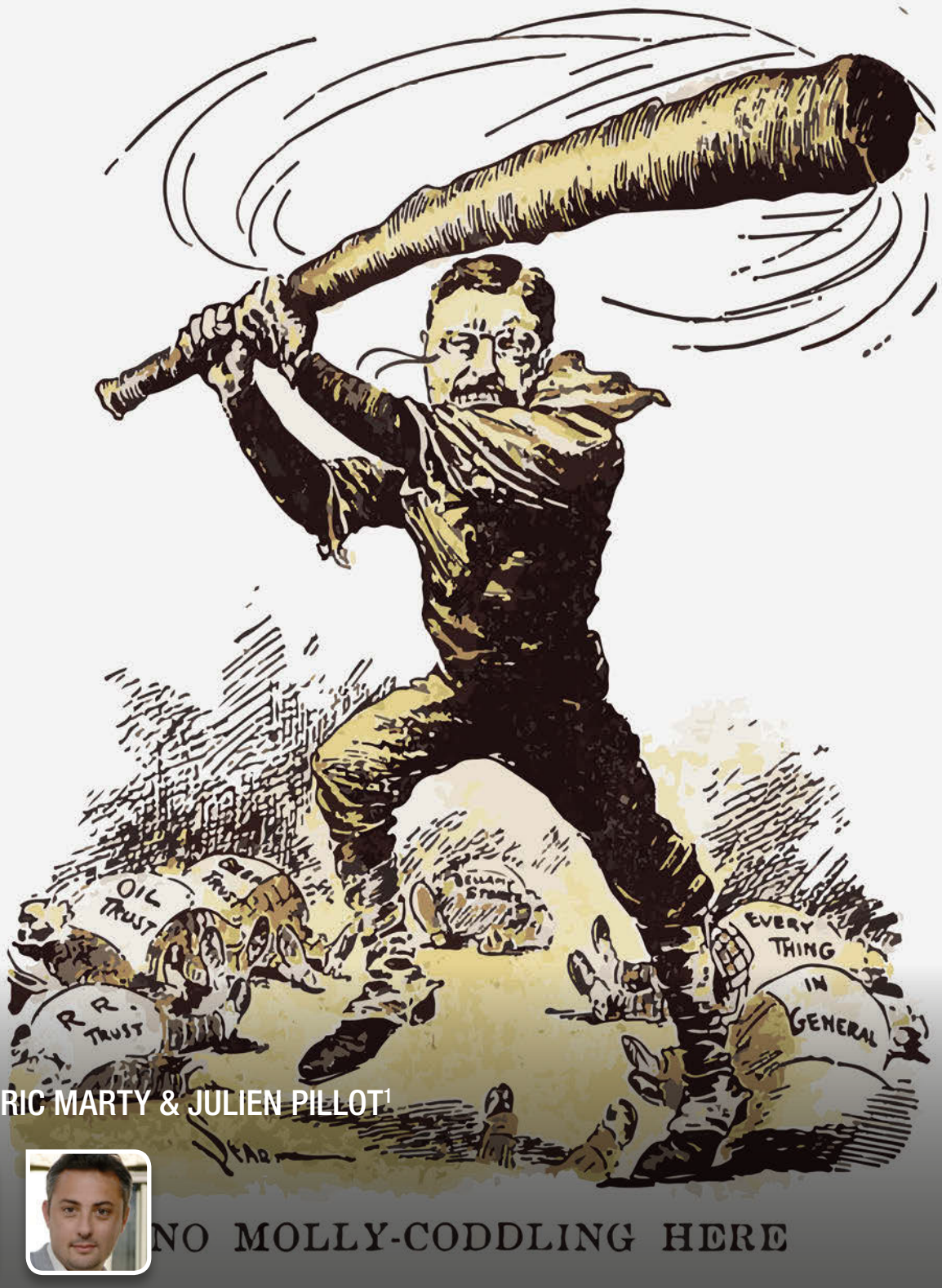
WITH UNCERTAIN DAMAGE THEORY COME UNPREDICTABLE EFFECTS OF REMEDIES: *"LIBRES PROPOS"* ON THE *ANDROID* CASE



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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, 2015[6] asserted Commission's unilateral power to revert to a contentious decision under Section 2 of Article 9.[7]

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."

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.

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 it[10] 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 product[12] 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 responsi-

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."

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.

bilities 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.

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.

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*.

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.

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 *tied 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.

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.

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.

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 risks[26] 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. 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

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.

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 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.

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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.

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*.

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.

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.*

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