Competition and Markets Authority: Mobile Ecosystems Market Study Statement of Scope

Inquiry response from the

Centre for Competition Policy

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This consultation response has been drafted by the named academic members of the Centre, who retain responsibility for its content.

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University of East Anglia

CENTRE FOR COMPETITION POLICY

CCP Response to the CMA's Mobile Ecosystems Market Study Statement of Scope

We welcome the opportunity to contribute to the Competition and Market Authority (CMA)'s mobile ecosystems market study. We respond here only to the questions for which we have expertise.

Introduction

Online platforms/ecosystems and algorithms impact the mobile application (app) market and the market for devices, in addition to the markets for operating systems (OS), advertising, and the long list of features listed in paragraph 1 of the CMA's Statement of Scope.[1]

The CMA's market study wishes to focus on Apple and Google ecosystems. We know that mobile applications for Apple devices are downloaded only through its online store, the App Store, and most of the apps installed on Android devices come only from Google's store, Google Play. Therefore, it is legitimate to deepen the understanding of how these two stores work and compete. Paragraph 3 suggests that, for the UK, Google and Apple split the mobile OS market roughly equally. This even market split between these two giants does not apply to all countries. For example, in Europe, the Android OS is dominant. This example raises the question of why we have disparities in the market share of mobile OSs across countries. There is then market segmentation between the two platforms, as highlighted in paragraph 14. Most of Apple's revenues come from selling Apple devices, while most of Google's revenues come from selling online advertising.

Apple and Google are gateways and determine competition within their ecosystem, creating a strong dependency of content developers on these two platforms. The objective of the CMA's market study is to establish how competition works for consumers and businesses and, in case of problems in the market, provide recommendations to foster competition. The description is broad and accurate, and the study will be conducted in a period where there are two ongoing competition enforcement cases, possibly feeding into the decisions. The study acknowledges using work from other jurisdictions.

The feedback offered in this reply to the consultation will be critical and, at times, will show contrasting views, which, hopefully, provide constructive criticism.

Description of the sector and observations

The algorithms used to rank the apps in the App Store and Google Play are relevant areas of investigation. So, are the decisions taken by the platforms to exclude apps/developers from their store. The app ranking affects the likelihood that a given app is downloaded by users, to the extent that developers of new apps may have an incentive to buy downloads to move up the ranking ladder (Li, Bresnahan, and Yin 2016) or to make noise through updates (Comino et al. 2018) to stay at the top of the ranking. This affects consumer choice which, in turn, affects developer competition in terms of pricing strategies and, possibly, innovation.

A remark is that not all consumers are equally affected. Groups of consumers segmented by age (young age segments are most affected) or interests, such as gamers, have different behaviours and

[1] Competition and Markets Authority (CMA) (2021), 'Mobile ecosystems market study: Statement of scope', 15 June 2021.

marginal propensity to spend. So, the impact will not just be at the market-level, but asymmetric across the various user segment.

In the case of paid apps, for Apple devices the payment has to be made uniquely through the App Store. Apple requires developers to pay an annual membership fee and keeps 30% of the sales price for each app sold. David Heinemeier Hansson, co-founder of Basecamp during his testimony before the Committee on the Judiciary, Subcommittee on Antitrust, Commercial, and Administrative Law, U.S. House of Representatives (2020), criticised the high fees that Apple (the same fees as in Google Play) charges as these signal a lack of competition. This is also a practice contested by the U.S. Supreme Court who ruled in 2019 that users are "direct purchasers" from Apple's Store. Considering the bargaining power that Apple exerts over developers, more competition among app stores would likely result in a lower mark-up charged by Apple, so that, on average, prices are lower. Google Play has a similar pricing structure, only recently changed (1st July 2021),[2] which halved to 15% of the charge for the first $1 million revenues per year for each app, following an identical decision from Apple Store, taken in December 2020.[3] While this might appear to be a coordinated move, there is no evidence of such co-ordination.

While according to Appinventiv,[4] worldwide gross app revenue is rapidly growing, apps are downloaded only through the two stores discussed above, with the App Store covering Apple devices, and Google Play servicing the Android OS on other devices. As there is no interoperability between Apple and Android devices, these two segments of the apps market are effectively dominated by two monopolists. The current market structure does not seem to provide any possibility of entry into the app stores' market.

Scope of market study and observations

The CMA plans to focus on the lack of competition and potential harms, but as explained below, its approach may be missing some lines of reasoning:

- More competition in one part of the ecosystem might mean a higher cost for at least one party in other parts of the ecosystem .
- More competition in certain parts of the ecosystem might mean less innovation in other parts of this ecosystem .
- More competition may lead to redistributions between app developers.

Examples of the issues:

- If we had five platforms rather than two, what would that mean for app developers? Will they all gain? Will there be winners and losers among developers? Will their uploading and maintenance costs go up, with implications for smaller developers?
- If we had seven app stores rather than one, consumer search costs would be much higher unless consumers know that the same product is available on all platforms.

[2] https://www.cnbc.com/2021/03/16/google-app-store-fees-cut-for-developers-on-first-million-in-sales.html.
[3] https://www.cnbc.com/2020/11/18/apple-will-cut-app-store-fees-by-half-to-15percent-for-small-developers.html.
[4] https://appinventiv.com/blog/google-play-store-statistics/.

Underdeveloped areas

One area which seems curiously missing from the CMA's consideration in this market study is the role that data plays within this market. Apple and Google both utilise data in their business models, albeit with somewhat different approaches. Apple is primarily a company that generates its income from the development of hardware,[5] and uses data to support this, whereas Google's business model primarily focuses on the collection of data through its services to then sell ads through.[6] Data, whether broadly collected 'user data' or 'personal data',[7] therefore plays a key role to both Apple and Google and their different strategic approaches to the market; and thus, its implications on the market in question should not be undervalued or underestimated.[8] In addition, the different approaches the companies take to using the data, such as their stances on privacy, data collection and data sharing,[9] may also explain some of the variations we see within the app market itself.

While it is acknowledged within the market study that Apple and Google provide an array of services, spanning various markets such as apps, browsers, and media services, the role of data that the companies have access to – and can use from these services – is not discussed or acknowledged. This data can impact the firms' behaviour in these other markets. For example, one can think that data could be leveraged from the browser market to influence purchasing behaviour (through the delivery of advertising) in the respective App Stores.

For the reasons identified above, it will be crucial for the CMA to examine the role and impact on the market that Google's and Apple's data access has. In performing this investigation, the CMA should work closely with the Information Commissioner's Office (ICO) to utilise each organisation's respective expertise – in competition and data.[10]

Another issue worth bearing in mind during the analysis is the role that exclusive hardware or tied features might play in consumer buying decisions and choices. For example, Apple's practice of

[5] Apple, 'Q2 Earnings Report', accessible at https://s2.q4cdn.com/470004039/files/doc_financials/2021/q2/FY21-Q2-Consolidated-Financial-Statements.pdf.

[6] For one example study into the data iOS and Android devices collect and report back to Apple and Google respectively see: Leith, D.J. (2021), 'Mobile Handset Privacy: Measuring The Data iOS and Android Send to Apple And Google', working paper, 25 March 2021, available at https://www.scss.tcd.ie/doug.leith/apple_google.pdf.

[7] As defined within CMA and Information Commissioner's Office (ICO) (2021), 'Competition and data protection in digital markets: a joint statement between the CMA and the ICO', 19 May 2021, available at https://ico.org.uk/media/about-the-ico/documents/2619797/cma-ico-public-statement-20210518.pdf , pg 8-10.

[8] For example, this data adds a significant competitive advantage to each firm, particularly relative potential new entrants, e.g., Newman, N. (2014), 'Search, Antitrust, and the Economics of the Control of User Data', Yale Journal on Regulation, 31(2) pp. 401-454

[9] For example, Apple's recent improvements to transparency for consumers in data collection and usage by apps: Apple, 'Data Privacy Day at Apple: Improving transparency and empowering users' 27 January 2021, accessible at https://www.apple.com/uk/newsroom/2021/01/data-privacy-day-at-apple-improving-transparency-and-empowering-users/.

[10] The CMA and ICO have acknowledged the importance of both data and competition and how the two are often intertwined in digital markets – see CMA and ICO (2021).

enabling 'consumer valued' features to work across its hardware, such as 'Handoff',[11] or 'Sidecar',[12] may lead to consumers purchasing more Apple hardware or utilising the Apple ecosystem further. While this can bring a variety of benefits to consumers – which are not necessarily achievable without integration – it can also lead to consumers being locked into an ecosystem, which can lead to a reduction in consumer buying choice and new entrants' options.

Finally, even though it is mentioned prominently in paragraph 150 (consumer harms), the document is currently missing any mention of why platforms induce (or fail to induce) competition in privacy, better privacy protection, or reduced data collection. Kesler et al. (2019)[13] find that competition seems to have minimal effect on privacy. Thus, if the CMA suspects that "weak competition in OS, browsers or app stores could lead consumers to share more data than they would otherwise…", this hypothesis requires a more systematic investigation, which we have not found.[14]

Critical questions around data are:

- Do users share more data than they would like to?
- Why is that the case, and why does competition within app stores currently not ensure that consumers can choose to share less data?
- How would more competition in OSs, browsers and/or app stores allow users to share less data?
- How much data should be retained by developers and platforms, and, from a social welfare perspective, how long should it be retained for?

Critical view of the four main chosen themes

Theme 1: Competition in the supply of mobile devices and operating systems

To examine how Apple and Google have risen to become the two dominant players in mobile services and mobile OSs, the CMA plans to explore several factors, including indirect network effects, as contributors to their success. However, besides the indirect network effects generated from developers/apps availability, the externality driven by developer/apps quality can also play a key role in shaping competition in the mobile services and mobile OSs market. The empirical literature on

[11] Apple, 'Use Handoff to continue tasks on your other devices', accessible at https://support.apple.com/en-gb/HT209455.

[12] Apple, 'Use your iPad as a second display for your Mac with Sidecar', accessible at https://support.apple.com/en-gb/HT210380.

[13] Kesler R., M.E. Kummer, and P. Schulte (2019), 'Competition and Privacy in Online markets: Evidence from the Mobile App Industry', ZEW Discussion Paper No. 19-064, available at: https://www.zew.de/fileadmin/FTP/dp/dp19064.pdf.

[14] Work by CCP members highlights that the app market, developer behaviour, and innovation (entry) cannot be understood without having a clear perspective on the role of data. See: Janssen, R., Kesler, R., Kummer, M., & Waldfogel, J. (2021), 'GDPR and the Lost Generation of Innovative Apps', Discussion Paper , available at: http://conference.nber.org/conf_papers/f146409.pdf ; and Kummer M. and P. Schulte (2019), 'When private information settles the bill: Money and privacy in Google's market for smartphone applications', Management Science, 65(8), pp. 3470–3494.

indirect network effects (Corts and Lederman, 2009[15]; Kim et al. 2014)[16] in hardware-software platform markets provides significant evidence that software quality is a salient source of indirect network effects.

In the market for mobile OSs, higher quality apps would make the OS more attractive to users, which drives more users to join that OS. In turn, more users joining an OS would incentivise developers to produce higher quality apps for the OS because of higher expected returns. This can form a positive feedback loop, which creates a barrier to entry since an OS entrant cannot attract developers producing high-quality apps without a large user base and vice versa. Doan et al. 2020[17] provides empirical evidence that higher app quality drives higher tablet demand for the OS where the app runs, thus confirming the indirect externality generated by app quality. In a market study by the Netherlands Authority for Consumers & Markets (ACM), a consumer survey shows that mobile app availability has a minimal impact on a consumer's decision to switch OS. In contrast, a better user experience, likely influenced by app quality, is the most significant factor for users to switch from Android to iOS. For all the above reasons, it is worth exploring the impacts of indirect externalities generated by app quality in addition to app availability (variety). This result is also relevant to the assessment of Theme 2 concerning whether there may be barriers to entry and expansion of rival app stores due to network externalities.

The CMA suspects that Google's and Apple's bundling of OSs with their other strong product lines (devices, browsers, search and apps) led to the dominant position of their OSs. The CMA should note that Google and Apple may have decided to invest in developing their OS precisely because they saw the potential to leverage economies of scope and might not have invested otherwise. The question is how to deal with this dominance. There is a need to recognise that efforts to make it easier to switch OS may risk higher switching costs between devices within an ecosystem. Similarly, while app interoperability is a great idea for users it could be costly for developers and OS providers. If this is the case, the benefits must be weighed against the costs.

We applaud the CMA's approach of looking at potential entry and the credible threat of entry, i.e., analysing whether phone manufacturers have an alternative to Google's OS at their disposal. Regarding the history of OSs and the strong position of Google and Apple today we support an investigation into the evolution of this market and how Google and Apple have managed to gain a competitive edge.

To decide whether competition between mobile device producers exerts a competitive constraint on Apple or Google's potential OS market power, it may be feasible to explore how differences in their business models may impact downstream device competition. While Apple employs a closed-license business model that does not license its OS to any other original equipment manufacturer (OEM), Google chooses to license Android freely to other OEMs. This difference can intensify intra-platform

[15] Corts, K. S., and Lederman, M. (2009), 'Software exclusivity and the scope of indirect network effects in the U.S. home video game market', International Journal of Industrial Organization, 27, pp. 121–136.
[16] Kim, J.-H., Prince, J., and Qiu, C. (2014), 'Indirect network effects and the quality dimension: a look at the gaming industry' International Journal of Industrial Organization, 37, pp. 99–108.
[17] Doan, T., Manenti, F., and Mariuzzo, F. (2020), 'Platform competition in the tablet PC market: The effect of application quality', CCP Working Paper 20-08, available at: http://competitionpolicy.ac.uk/documents/8158338/31901793/CCP-20-08.pdf/4ff67d91-c8d2-4aaf-3482-9ebadf5444c3.

competition among Android device manufacturers and soften inter-platform competition between manufacturers that use different OSs. Doan et al. 2020 estimates the elasticities of iPads and Android tablets and finds that the cross-price elasticities of products belonging to alternative OSs are smaller than 0.01 and significantly smaller than for products on the same OS. Softer competition among producers of different OSs means a weaker competitive constraint on the market power that Apple and Google may enjoy at the OS level.

Theme 2: Competition in the distribution of mobile apps

It should be noted that there is value for consumers in having the app distribution limited to a small number of app stores, as this market structure reduces search costs - a potentially significant contribution to social welfare, and multi-homing costs for developers. The absence of competition between app stores could be of less importance if Google and Apple provide incentives that encourage app creation by developers.

Theme 3: Competition in the supply of mobile browsers

We make no specific comments.

Theme 4: The role of Apple and Google in competition between app developers

While it is a concern that Google and Apple push their own apps, it is important to note that several pre-installed apps can act as complements to each other and the OS, thereby enhancing the value of the OS and smartphone devices.[18] Also, pre-installations provide a functional benefit to consumers who do not have to spend time installing all these apps, which could be a deterrent to the purchase of a new phone.

We applaud the CMA's aim of deepening the understanding of how the app stores work.[19] However, the ability of Google and Apple to tweak their search algorithms to favour their own interests might be limited. Ultimately their primary goal must be to provide high quality search services to the user and, hence, to focus on a high quality match between search enquiries and search results. Reducing search match-quality to push their own apps or earn revenue could reduce the value generated from their search services. Similarly, competition between apps, and innovation from app developers, are significant ingredients to these eco-systems' success which Google and Apple will benefit from.

It is also not obvious that Google and Apple have an incentive to distort their search results for payments. Selling positions in an app search result would seem of limited interest, as most developers are small (Janssen et al, 2021), hence, it seems implausible that they can offer sufficiently large payments for Google or Apple to be convinced to tweak their search results. Even if app search were

[18] CCP member Michael Kummer has published extensive research on app developers' strategies, specifically in the context of data collection/user privacy, see the Reference section.

[19] An early paper on the role of rankings is Carare, O. (2012), 'The Impact of Bestseller Rank on Demand: Evidence from the App Market', International Economic Review, 53(3), pp. 717–742. A core challenge in understanding search results is to disentangle app quality from the impact of the ranking. While Google and Apple might tweak the ranking measure, the algorithm might directly consider app quality (via adoption dynamics, ratings, sentiment in app reviews etc.).

being manipulated for payment, it is not clear whether this would hurt consumers or encourage faster innovation.

On the ability of Google and Apple to force developers to use their in-app payment mechanism, one should note that only a very few giant apps, like Spotify, could credibly bypass this requirement. For smaller apps, the in-app purchase option has revolutionised the ability to monetise apps. Before the possibility of in-app payments, monetisation could only occur via paid-for advertising or the (highly unsuccessful) pay-before-installation approach (Kummer and Schulte, 2019). Note also that if all apps could charge users directly, there would a greater risk of scams and other security issues, which a centralised in-app purchasing system give some protection against.

Potential remedies (including whether they would be appropriate, proportionate, and effective)

We support paragraph 127 as we believe that the benefits from the status quo deserve due consideration. The high level of social welfare that Apple and Google's ecosystems are generating should be noted alongside the role they have played, and are playing, in driving technology adoption. Nevertheless, several of the remedies discussed in the report appear to be very useful.

We hope that all potential remedies are evaluated rigorously for their benefits to competition and for potential social welfare reductions to other parties (e.g. user time, search costs and reduced profits). We want to point this out because our research finds that the introduction of the General data Protection Regulation (GDPR) severely impacted entry and innovation in the app market without improving experienced privacy by very much (Janssen et al., 2021).

We think that a possible remedy would be to allow more stores on both Apple and Android devices. For example, device manufacturers could have their online store offering a set of pre-installed apps on their devices. This remedy, in turn, may not only lower app prices by lowering markups, but also create competition among algorithms that rank apps' visibility within a given store.

However, a remedy that creates more app store than Apple's and Google's might lead to very costly market segmentation and search costs, especially if apps were to single home on one of multiple platforms and users had to figure out on which store to look for them. Equally, if remedies were designed such that apps automatically multi-homed in several stores (so that they are found wherever the user looks for them), this might affect the incentive for entry in the app distribution segment, e.g. stores that evaluate privacy more stringently, or stores that specialise in free apps etc.

At the same time, there should be liberalisation of payment methods for app purchases on Apple devices. Currently, the Apple payment system is the only one allowed on Apple devices. This restriction affects competition in the mobile payments market and, more generally, in the payment systems market.

Regarding remedy area 2, any intervention aimed at promoting interoperability and common standards would act both as a tool to overcome barriers to switching and a mechanism to enhance consumer welfare via the availability of a greater variety of apps, possibly of high quality. Doan et al. 2020 show that imposing interoperability across iOS and Android (so that users of both OSs can download apps from either store) can also enhance consumer welfare on the device side.

Turning to pre-installed apps, we recognise that they increase switching costs and may allow the pre-installed applications to "cement" their market positions. However, pre-installed apps are highly convenient and save users an enormous amount of time. A remedy that disallows pre-installation of apps might induce more competition, but its cost in terms of reduced social welfare (user time) might be hard to justify vis-à-vis potentially limited (and uncertain) gains from increased switching and more competition.

Our view on remedy area 4 is that separation remedies are a forceful intervention to ensure a more levelled playing field, promote competition and lower consumer prices and that they can have unintended consequences. They can chill some types of innovation, for example, innovations that depend on collaboration between complementary businesses, as explained by Gilbert (2021).[20] The OECD (2020)[21] comments that separation remedies are likely to be effective in the market for utilities, where infrastructure becomes natural monopolies, however, this may be not be applicable to mobile ecosystems. Hence, one needs to be very cautious about implementing separation remedies in the context of mobile app stores. The lessons from the structural separation of AT&T drawn by the literature provides insights into potential impacts (both positive and negative) of such remedies on competition and innovation, as discussed in Gilbert (2021). It is also worth considering the line-of-business restriction remedies mentioned in OECD (2020). These are mandated access under fair, reasonable and non-discriminatory (FRAND) terms or non-discrimination obligations. OECD (2020) suggests that non-discrimination obligations may be an appropriate remedy when the antitrust concern is about firms self-preferencing or terms of use that foreclose rivals by increasing their costs. This could well be relevant for Apple and Google's app stores with their in-app payment commission fees and prohibitions on developers using alternative payment systems.

Other potential interventions

It would be useful to collate the various injunction decisions against Google and Apple and reflect on whether these could be tools that could be beneficially used in certain situations.

Further points

It is stated in places, but not emphasised that Apple and Google have created ecosystems (or built infrastructures supporting them), where profits and social welfare are generated by the innovative achievement of bringing together a wide variety of ingredients into a single ecosystem, namely:

- Easy to use for end-users.
- Easy to develop apps for (for developers and content providers).
- Easy to advertise in (for advertisers).

It is possible that the value generated by the currently successful ecosystems for social welfare is an order of magnitude greater than the costs from the absence of competition. In other words, the

[20] Gilbert, R. J. (2021), 'Separation: A Cure for Abuse of Platform Dominance?', Information Economics and Policy, 54.
[21] Organisation for Economic Co-operation and Development (OECD) (2020), 'Lines of Business Restrictions – Background note', Working Party No.2 on Competition and Regulation, Directorate for Financial and Enterprise Affairs Competition Committee, DAF/COMP/WP2(2020)1, 8 June 2020, available at: https://one.oecd.org/document/DAF/COMP/WP2(2020)1/en/pdf.

CMA needs to be careful to assessing the risks of destabilising current arrangements relative to the benefits of increased competition.

Evidence gathering

The plan for the market study is very ambitious, but it is legitimate given the importance of the study. Meeting key interested parties could include the collection of evidence as in the U.S. where a group of academics, app developers and representatives of businesses were asked to testimony before the Committee on the Judiciary, Subcommittee on Antitrust, Commercial, and Administrative Law, U.S. House of Representatives.[22]

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