

Appendix B: a summary of the responses to our statement of scope

Introduction

1. On 15 June 2021, we published our statement of scope document alongside a notice for a market study into mobile ecosystems. It set out the intended scope of the study – which includes the supply of mobile devices and operating systems, app stores and browsers – while also highlighting a number of issues that would not be a primary focus of our work. It also explained the main competition concerns that we would be investigating, set out under the following four themes:
 - competition in the supply of mobile devices and operating systems;
 - competition in the distribution of mobile apps;
 - competition in the supply of mobile browsers and browser engines; and
 - the role of Apple and Google in competition between app developers.
2. We invited comments and views from stakeholders on the following areas:
 - Our description of the sector, and whether this is broadly accurate.
 - The proposed scope of the market study, including whether there are areas we should particularly focus on, and whether there are important areas we have missed. In particular, we invited views on whether we should focus on desktop browsers, alongside mobile browsers, within the study.
 - The four themes identified, including views on the potential concerns we are considering.
 - The range of potential remedies, including whether they would be appropriate, proportionate, and effective, and whether there are other potential remedies we should consider.
 - Our proposed approach to evidence gathering.
3. We received 53 responses from a variety of stakeholders, including 26 written responses, and 27 responses to our online questionnaire for app developers. The written responses came from a broad spectrum of stakeholders, including Apple and Google, app developers, technology firms, news media

organisations, telecoms, industry associations, and academics.¹ We have published these written responses on our case page.²

4. This document summarises the key messages and common themes emerging under each of the five areas above. We have provided a short response to the key points at the end of each section.

Our description of the sector

5. Only a small number of respondents addressed this question directly, with some of those offering brief supportive statements to say that they broadly agreed with our description of the sector. Some also welcomed our recognition of the interconnectedness of markets, and agreed with the identification of Apple and Google as ‘gatekeepers’ within mobile ecosystems.
6. A small subset of respondents who addressed the issue offered some challenge to our description. In particular, one response suggested that we should consider the App Store and the Play Store as separate markets, while another highlighted a few areas for us to consider, including the suggestion that any separation of markets for devices, operating systems and app stores would be artificial. Another highlighted the importance of the role of Apple and Google as ‘stewards’ of the mobile ecosystem.

CMA Response:

- We have taken on board much of this feedback in our approach in the first half of the market study. This is reflected in our assessment of the competition faced by Apple and Google in different activities within their ecosystems.

The proposed scope of the market study

7. Around three quarters of respondents provided some feedback on the scope of the study, with the majority being supportive of our proposed approach. Several offered strong overarching support for the holistic approach we have taken, recognising that this is necessary to properly understand business models and to identify issues that cut across a range of interconnected products and services.

¹ See Annex A to this appendix for a full list of respondents.

² [Mobile ecosystems market study - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/consultations/mobile-ecosystems-market-study).

8. The more detailed or specific feedback on the scope of the study generally fell into two categories. The first includes those responses that were broadly supportive of the scope and framework for the study but were urging us to place greater emphasis on particular areas where they highlighted concerns, or to bring them more explicitly within our scope. These included:
- several calls for an increased focus in the study on a range of devices and technology that connect to or can be controlled by mobile devices, such as wearables, voice assistants, TV operating systems, and connected vehicles and operating systems;
 - a suggestion that the CMA be alert to emerging technologies in the sector (such as e-SIMs), in order to help future-proof the design of the new regulatory regime; and
 - a few responses that believed that the role and importance of data was not adequately reflected in the scope of the study, with one response highlighting in particular the importance of the CMA working closely with the Information Commissioner's Office (ICO) on this issue.
9. The second group were three respondents who offered the strongest challenge to the proposed scope. In each case, this challenge appeared to be set on the basis that we have not taken a sufficiently broad or holistic view of mobile ecosystems, such that we had failed to recognise the fierce competition that exists in certain markets, or the benefits that current market dynamics deliver for consumers and other market participants. These respondents encouraged us to:
- look even more broadly at the sector to fully understand current competitive dynamics, noting in particular that several operating systems were in use across smart speakers, security systems and wearables;
 - recognise that more competition in some areas of the ecosystem will come with trade-offs in others, potentially resulting in higher costs and reduced innovation elsewhere;
 - consider the benefits that come from existing market dynamics, highlighted in particular the role of Apple and Google acting as 'ecosystem stewards', which they considered resulted in more stable ecosystems, to the benefit of developers.

CMA Response:

- When determining the scope of this market study, we recognised the need to balance the extent to which we explore numerous interconnected issues across the digital sector with the need to ensure the market study was of manageable scale and sufficiently focused on detail and evidence. The feedback we received, and our work to date, gives us confidence we have struck broadly the right balance in this regard.
- As indicated in our statement of scope, technologies such as wearables and voice assistants are within scope of our study, and we have been considering the part they may play in locking consumers into a single mobile ecosystem.
- Data – and in many cases the processing of personal data – is a key part of our thinking that runs through many aspects of our study. We have sought to be as clear as possible about this in our interim report. We have continued our close working relationship with the ICO throughout this study, including engaging with them on a number of key issues discussed in this report.
- We have been mindful not to overlook the benefits that devices and software within mobile ecosystems have brought consumers, or the market opportunities that they have created for app developers and other businesses.

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

Overview

10. Though not a universally held view, there was a general recognition from most respondents that users of mobile operating systems face limited choice, and that there are various barriers to entry and expansion into this market.
11. However, some respondents did present an alternative perspective. One highlighted the benefits to developers of the status quo, and suggested app developers can ‘multi-home’ on multiple operating systems and still have many options for developing software and applications.

Barriers to entry and expansion in the supply of mobile devices and operating systems

12. There was general agreement amongst most respondents that barriers to entry, economies of scale, and network effects were present in the provision of mobile operating systems.
13. In addition, there were several suggestions for how both Apple and Google might be influencing these conditions to their advantage, for instance through their ability to dictate the terms of contracts and agreements with device manufacturers, and the introduction of special features and default settings, which they used to enhance network effects and limit competition.
14. However, several respondents felt that more consideration of the benefits provided by the current mobile ecosystems was needed. These respondents also highlighted that there could be varying effects across different parts of the market if any existing dynamics (ie structural, commercial, etc.) were altered. For example, one response highlighted that while limited interoperability may constrain competition, it may also bring a variety of benefits for users. It argued that while there could be benefits for competition from lowering barriers to entry, such as improved interoperability resulting from the greater ease with which consumers could switch between operating systems or devices, this could also increase costs to app developers.

Areas for further consideration in Theme 1

15. In addition to the above comments, we received a number of suggestions from respondents about areas that needed further consideration within this theme, including:
 - the importance of understanding the differing business models of Apple and Google, how these differ from traditional models, and the implications of this for their incentives and competition;
 - the history of operating systems in the UK and how this compared with the rest of Europe;
 - emerging trends and disruptive technologies such as cloud-based services and consider whether Apple or Google could prevent such disruption; and
 - Google's agreements with third-party device manufacturers and whether device manufacturers are subject to coercive commercial pressure from Google.

16. We also received suggestions that there would be value in the CMA gathering evidence on the following policy areas that could further enhance competition:
- promoting active consumer choice, including on understanding the behavioural evidence around choice architecture;
 - promoting users' ability to switch between operating systems and on understanding how greater interoperability affects switching; and
 - promoting consultation with affected businesses in advance of any major product changes by operating system providers.

CMA Response:

- We have noted suggestions for areas to focus on within this theme, and these are reflected in our interim report. For instance, Chapter 2 sets out our understanding of Apple's and Google's business models, and how these affects their incentives, while Chapter 3 and Appendix E set out in substantial detail our understanding of Google's agreements with device manufacturers.
- We have also taken note of the points made which highlighted the many benefits of the current mobile ecosystems, and the potential trade-offs and risks that may result from substantially altering the competitive dynamics within and between mobile ecosystems.

Theme 2: competition in the distribution of mobile apps

Overview

17. Several respondents referred to the presence of barriers to entry, economies of scale and network effects in the distribution of mobile apps. In addition, there was concern that Apple and Google were taking advantage of their position within the market, by making potentiality exploitative agreements with app developers (in the case of Apple and Google) and device manufacturers (in the case of Google).
18. Some responses also raised concerns about how Apple and Google's actions enhanced consumer lock-in, for example through their in-app purchase requirements. These respondents suggested that there should be greater focus within the market study on understanding how Apple's and Google's actions contribute to consumer lock-in.

19. However, others pointed to the benefits of the way in which ecosystems currently operate. In particular, one respondent argued that the indirect network effects are beneficial to developers, as the platforms have the incentive to invest in the service to attract more developers.
20. Another also argued that the absence of new app store market entrants was not a source of concern, given the high levels of innovation in the market as a whole. Rather than new app stores, it argued that investment and innovation was focused on the next technology that would become popularised on smartphones.

Alternatives to distributing native apps within the device

21. A small number of respondents commented directly on the viability of alternatives to the App Store and Play Store, and on the extent to which they act as a competitive constraint on Apple and Google.
22. Several respondents noted the availability of alternatives on Android devices, such as alternative app stores, sideloading and access to web apps and web pages. Google noted that it was possible to access app stores on other devices, such as games on traditional games consoles (eg Xbox, PlayStation) and handheld consoles (eg Nintendo Switch), or video streaming services via smart TVs.
23. Google also said that pre-installation agreements between device manufacturers and individual app developers offers another viable alternative to distributing native apps through app stores or sideloading apps. It cited Facebook, Spotify, and Microsoft as examples of apps that were pre-installed on certain manufacturers' devices. Other respondents also cited the benefits of pre-installed native apps, highlighting the convenience from a consumer's perspective and alignment with consumer expectations.
24. However, several respondents noted that while there were alternatives available to Google's app store, many of these alternatives faced other limitations. For instance, that alternative app stores faced technical challenges not faced by Google's app store, such as not being able to automatically update apps (although it was also noted that the forthcoming Android 12 operating system may solve this limitation). Several respondents, including both Apple and Google, highlighted that sideloading carries additional security risks (with Apple citing security as one of the main reasons it does not allow sideloading onto its devices).

25. Furthermore, while some parties highlighted the benefits of web apps over native apps for developers,³ a number of parties stated that web apps are presently not effective substitutes for native apps. Several respondents highlighted that the limitations of web apps were due at least in part to restrictions imposed by design.

Apple and Google in-app purchase requirements

26. Several responses raised concerns about the impact of Apple's and Google's requirements on developers to use their in-app purchase systems. Concerns raised regarding in-app purchase requirements included:

- platform operators using their control of platforms to require the use of their in-app payment services, extracting high levels of fees from other companies (for example, a 30% commission on in-app purchases), impacting developer margins, and potentially disincentivising new developer entry into the market;
- negative effects on competition in the mobile payments market and, more generally, the payment systems market, as a result of only one payment method for in-app purchases of digital goods being available on the App Store and Play Store;
- consumers potentially being deprived of the innovation and flexibility offered by other payment systems and having better after-sale services (including discounts, special offers, etc); and
- Apple and Google getting preferential access to key commercial information such as app developer customer lists, purchasing activities, and the success of subscriptions and in-app products – thereby gaining valuable insights to assist the development of their own proprietary apps.

27. However, one response made the argument that payment processing was just one aspect of the various services provided by software platforms (in addition to access to users, marketing, privacy and security), and that complaints were primarily being brought by a small number of large developers with global brands.

28. While Google did not comment on this issue in its response, Apple explained that its in-app payment system is a mechanism for Apple to charge a

³ In particular, it was highlighted that web apps would allow developers to create one universal app, which could be updated more easily, for instance reducing the risk of bugs.

commission for the sale of digital content through the App Store, which is how Apple earns a return on its investment.

CMA Response:

- We note that there were mixed views on a variety of issues within this theme, including on the viability of the various potential substitutes to Apple's and Google's app stores. The extent of competitive constraints relating to app distribution is considered in Chapter 4. The impact of in-app purchase requirements is also discussed in Chapters 4 and 6.
- Through the first half of the study, we have sought to gain further evidence regarding any potential limitations or security concerns regarding alternatives to app stores such as sideloading and web apps. These factors are discussed in Chapter 4 of our interim report, and also feature in our identification of potential interventions in Chapter 7, where we invite further views on such issues.

Theme 3: competition in the supply of mobile browsers and browser engines

Overview

29. Several respondents provided comments on the browser market and raised concerns about effective competition in this area. Many of these related to concerns around the way in which Apple and Google appear to have control over the way browser engines and the user interface (the browsers) operate on iOS and Android.
30. There were several suggestions that many users were not aware of alternative choices of browser; and that those that were aware of alternatives may not be able effectively to choose between browsers due to a general lack of awareness of other restrictions applied to browsers. For instance:
 - Several respondents commented on the impact of default settings and pre-installation of browsers on consumer choice.
 - Respondents also raised concerns around Apple's WebKit restriction on iOS, which limited the underlying browser engine on Apple phones to WebKit, even though it appeared to offer a choice of overlying browser. Respondents argued this gave a false illusion of consumer choice, while also restricting browsers on Apple phones to the functionality of Safari. Some highlighted that as a consequence of Apple's restriction, it had

further power to limit the functionality and viability of progressive web apps as an alternative to native apps.

- Respondents also highlighted the links between browsers and general search functions and the potential for leveraging from browsers into other markets.
 - Some respondents also suggested that Apple and Google have an overall incentive to limit the usability of web apps compared to mobile apps, as they each operate proprietary app stores from which they take a percentage cut of payments taken.
31. However, Google's response offered a defence of its position in respect of enabling competition between browsers on its Android platform, highlighting that users had a choice of browsers and browser engines on Android, and that device manufacturers could pre-install rival browsers.
32. Looking further ahead, one respondent also said that significant changes were likely to emerge in the market for browsers and browser engines, as a result of disruptive innovations around voice, virtualisation, and natural language search systems.

CMA Response:

- In light of the responses received, a key focus of our work in the first half of our study has been to better understand the impacts that Apple's restrictions on alternative web browsers and browser engines have on competition and consumer choice. We have also sought to understand Apple's rationale for these restrictions in as much detail as possible.
- In addition, we have sought to understand the real-world impact of changes Google has made that ought in principle to promote greater competition and choice, such as the choice screen for setting the default browser on Android devices that it is now required to offer following action by the European Commission.

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

Overview

33. We received several responses that highlighted concerns over ways in which Apple and Google can influence competition between app developers. These included concerns about:

- Apple and Google’s ability to influence competitive outcomes and distort consumer choice through the algorithms they use which determine how particular apps are featured, displayed, or ranked through the ‘search’ functionality on their app stores.
 - the ability for Apple and Google to provide their own apps with a competitive advantage, by having them pre-installed (and sometimes undeletable) and/or setting them as the default on their respective operating systems. In addition, it was noted that Apple’s own apps cannot be rated by users and that this may protect them from user criticism.
 - A lack of transparency around the app review process and subsequent decision-making.
34. Multiple respondents also raised strong concerns with us that Apple’s and Google’s access to commercially sensitive data, through the operation of their app stores, provided them with a competitive advantage by allowing them valuable insight into the performance of various apps on their ecosystems, which is not available to third-party developers. Respondents claimed that this also gives Apple and Google access to information in relation to innovative products and services, enabling them to develop their own, similar products. Some of these respondents went on to argue that these dynamics may ultimately harm consumers insofar as they reduce developers’ incentives to innovate.
35. However, others offered alternative views to the above. In particular, we heard that:
- Apple and Google have strong incentives to provide high quality search services to users of their app stores;
 - pre-installed or default apps can provide high value to users of mobile devices, in particular in terms of convenience; and
 - the app review processes are important for smaller and less well-known developers to obtain the trust of consumers that an app is safe to download and free of viruses, malware, or illegal content.
36. Both Apple and Google made the case that they each support app developers, and that their incentives are strongly aligned with positive consumer outcomes in this regard:
- Apple explained that it ‘depends on innovation by third-party app developers to compete, as the App Store is a key feature of iPhone’ and

that its ‘incentives are to give consumers choice, while ensuring that its consumers are not exploited’.

- Google noted that it has ‘introduced a wide range of measures to keep distribution costs in Play low, deliver tools and services that add value for developers, and treat developers equitably’. It also said that ‘Play ranks Google-owned and third-party apps consistently. The fact that we develop an app does not change the position in which it appears in response to a query in Play.’

Apple’s ATT changes

37. In addition to the above, and specific to Apple, we received a range of views and concerns on the way that it has implemented its App Tracking Transparency (ATT) changes. These changes, introduced in April 2021 on iOS 14 devices, give users a choice to ‘opt-in’ to allow developers to track their activity across different platforms. A number of respondents expressed concern that Apple is able to ‘self-preference’ its own advertising services by impairing advertising on iOS via ATT while at the same time expanding its own advertising.
38. We also heard concerns that Apple’s ATT changes will substantially reduce revenues for those app developers whose business model relies on advertising rather than, for example, subscriptions. A couple of respondents highlighted that opt-in rates to allow ‘tracking’ are even lower than was initially expected.
39. Apple explained in its response to our Statement of Scope that the protection of its users’ privacy is highly important to it. With respect to ATT, Apple made the point that these changes empower consumers to make decisions about their own privacy. Furthermore, Apple said that it holds its own service to the same data protection and user privacy standards as it requires from third-party app developers.

CMA Response:

- It was noted that under this theme a variety of views were presented on each of the main issues raised in our Statement of Scope. Apple’s and Google’s influence over competition between app developers is considered further in Chapter 6.

The range of potential remedies

Overview

40. The majority of respondents commented directly on potential remedies. Of those who did, most agreed that the range of remedies being considered by the CMA was appropriate. Several respondents also stressed the importance of effective enforcement of remedies. It was also suggested that where issues cut across different sectors, the CMA should collaborate with sector-specific regulators on solutions.
41. Some respondents highlighted the work taking place in other jurisdictions in this space. For example, one response said it would be useful to collate lessons from other regulatory decisions against Google and Apple, to consider whether such findings could be applied elsewhere.
42. Some respondents recommended going further than the remedies outlined by the CMA, including one that argued that the CMA should consider whether mobile platforms should be regulated as utilities, given the importance of these platforms to the modern economy. On the other hand, a few respondents stressed that remedies should not be decided before a market assessment had concluded that competition issues were present. They argued that remedies could have knock-on consequences that would be detrimental to the ecosystem as a whole and could harm consumer choice.

Comments on remedies relating to limiting platforms' ability to exercise market power

43. There was general support for remedies aimed at Apple's and Google's ability to exploit market power. This included support for: requirements on fair and reasonable terms and conditions; requirements on transparency and data sharing, including increased transparency of decision making; and limiting the ability of platforms to self-preference their own services.
44. Several respondents also gave explicit support to requirements on platform operators to allow access to other services through their platforms (such as through allowing alternative app stores or payment mechanisms, a choice of browsers, or improved access to web apps).
45. Several respondents specifically supported remedies aimed at increasing transparency around how platforms operate and make decisions. This included support for transparency on how services were bundled, as well as fair and transparent processes for resolving disputes.

46. In addition, one respondent said that future codes of conduct developed by the Digital Markets Unit should be designed with flexibility to be able to capture future technological developments, such as e-SIMs, to ensure that unfair terms and conditions are not imposed in new markets linked to existing mobile ecosystems.
47. A few respondents argued that there should be remedies aimed at strengthening intellectual property rights. One said that inventors' patent rights needed to be enforced, including by increasing the penalties for infringements.
48. Some responses indicated that that exploitation of market power could already be tackled under existing powers. One pointed to several, potentially unlawful anti-competitive practices which warranted further research by the CMA, including not allowing competing app stores on devices, and the misappropriation of innovative technology.
49. Apple, however, argued that it was already operating under similar terms and conditions as others on their store and said that it already applied the same standards, for instance on privacy and ATT, to itself as it did to others. Apple also argued that allowing some potential solutions, ie sideloading, would weaken security in the app store.

Comments on remedies relating to interventions to promote interoperability and common standards

50. A number of respondents felt that remedies to promote interoperability and common standards could be useful. One highlighted the importance of data portability, and said that interoperability and data portability would spur competition and innovation.
51. On the other hand, another response argued that enforcing interoperability standards was likely to reduce competition. Another suggested that, given the rapidly evolving nature of tech, it would be challenging to see interoperability remedies work effectively. Instead, their view was that platforms would be able to frustrate regulation by renaming existing products or deploying new ones.

Comments on consumer choice interventions

52. There was general support for remedies aimed at promoting consumer choice. In particular, there was support for consumers being given increased choice over the use of their data. There was also support for the CMA gathering behavioural evidence on choice architecture.
53. However, one response said that consumer choice remedies may not be sufficient if they focus solely on increasing consumer awareness, due to the

market power of platform providers. While it argued that the CMA was right to focus on consumer choice architecture and defaults presented to consumers, it said that such remedies needed to be accompanied by forced liberalisation of the market.

54. Another respondent also pointed to the importance of developers owning the direct relationship with consumers and said that developers should be able to communicate directly with their users through their apps, while another said the CMA should consider whether remedies were needed to address Apple's and Google's position between users and suppliers.
55. We also received views that despite the impact on competition, there should not be a ban on pre-installation of apps due to the social welfare benefit that this practice can offer.

Comments on separation remedies

56. Several respondents commented that separation remedies should not be ruled out. In particular, one said that separation remedies could create a more robust market, lead to enhanced competition, spur innovation and increase consumer choice, adding that if Android were separated it could allow for non-discrimination in the treatment of apps, and true open access for developers. The same response also said that structural separation would be easier for regulators to manage and would be less easy for its targets to manipulate than behavioural remedies.
57. We heard in another response that separation remedies presented credible solutions to inherent conflicts of interest in mobile ecosystems, suggesting three potential separation remedies which could help establish a functioning competitive marketplace:
 - separation of provision of in-app payment processing services from operation of app store platforms;
 - separation of app quality review function from the operation of app store platforms and provision of operating systems; and
 - separation of operation of app stores from mobile operating system development.
58. However, support for separation remedies was not universal, with a few respondents making the following points:

- while separation remedies could help promote competition and lower prices, they could also have unintended consequences, including by stagnating innovation; and
- that separation remedies may not necessarily solve competition problems within mobile ecosystems, and that in some cases behavioural remedies would be more appropriate.

CMA Response:

- We have considered all views and recommendations on responses carefully when assessing which remedies to examine in further detail in the event that we identified potential issues in the market.
- In particular, as raised by several respondents, we are aware of the need for any interventions to be designed in a way that is effective, enforceable, and future-proofed, while also seeking to limit unintended consequences.

Our proposed approach to evidence gathering

59. Most responses that commented on this issue were in agreement with our proposed approach to evidence gathering. There were some suggestions of potential additional steps that we should take, including:
- requesting further information from small and micro-enterprises;
 - drawing on previous research undertaken by the CMA and international counterparts in similar investigations;
 - requesting non-public documentation, witness statements and evidence from US and EU proceedings where possible; and

- supplementing any data the CMA is able to gather from Apple and Google with research from other sources such as consumer studies.

CMA Response:

- Our evidence gathering throughout the first half of our study has been expansive, including making strong use of our powers to request information from parties.
- However, we have sought to minimise burdens on businesses where possible, including by drawing from existing research and gaining insights from relevant work carried out in other jurisdictions around the world.
- We have highlighted a number of areas within our interim report that we will focus on in the second half of our study in order to strengthen our understanding of competition in these markets.

Views on a market investigation reference

60. In our market study notice we invited representations on whether to make a market investigation reference under section 131 of the Enterprise Act 2002.
61. We have not received any representations to make a market investigation reference in any of the responses we received nor during any separate engagement with stakeholders in the first half of our study.
62. In Chapter 9 of this interim report, we explain why we do not propose to make a market investigation reference at this time.

Annex A: List of respondents to our statement of scope

To access the responses please see the [Mobile Ecosystems case page](#).

Table 1: Table of respondents to our statement of scope.

ACT The App Association
Apple
Bauer Media Group
BBC
British Vehicle Rental and Leasing Association
BT Group PLC
Centre for Competition Policy at the University of East Anglia
Coalition for App Fairness
Daniel Gabriel Whyatt
Developers Alliance
Diana Montenegro
DMG Media
Dr Greig Paul and Dr James Irvine
Geoff Moulds
Google
Hausfeld & Co LLP
Kelkoo Group
Konstantinos Stylianou
Mark Holmes
Marketers for an Open Web Limited ⁴
Masimo
Matthew Thomas
Oracle Corporation
Tile
Virgin Media 02 UK Limited
Vodafone UK

⁴ Since this submission, this group has changed its name to Movement for an Open Web Limited.