

Mobile browsers and cloud gaming

Consultation on proposed market investigation reference

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1. Consultation on scope of proposed market investigation

Introduction

- 1.0 In June 2022, we published our mobile ecosystem market study final report,¹ which found that, within their respective mobile ecosystems, Apple and Google have substantial and entrenched market power over the key gateways through which users access content online through their mobile devices. This control over their mobile ecosystems puts them in a powerful position, allowing them to determine the ‘rules of the game’ and making it difficult for rival businesses to compete.
- 1.1 The market study final report also identified a number of potential interventions aimed at unlocking competition in these markets or protecting market participants from harm. We concluded that many of those remedies would be best placed to be taken forward by the new pro-competition regime for digital markets, with new powers which will be granted to the Digital Markets Unit (DMU).
- 1.2 In the meantime, where most appropriate, the CMA is making strong use of the full extent of its existing toolkit. This includes competition and consumer law enforcement, rigorous merger assessment, and proactive use of our markets tools and associated information gathering powers.
- 1.3 Consistent with this approach, we are now consulting on a proposed market investigation reference (MIR) into the supply of web browsers and browser engines on mobile devices, and the distribution of cloud gaming services through app stores on mobile devices (referred to as ‘mobile browsers and cloud gaming’ throughout the remainder of the document). This decision follows multiple calls for further direct action by the CMA since publication of our market study interim report in December 2021,² along with our updated understanding of the potential timing of legislation to place the DMU on a statutory footing.
- 1.4 The proposed MIR offers the opportunity to address issues in both mobile browsers and cloud gaming, in particular restrictions limiting disruptive innovation and new entrants, and their expansion, in these markets. The

¹ CMA [Mobile ecosystems market study](#) case page.

² CMA [Mobile ecosystems market study interim report](#).

proposed MIR provides us with an opportunity to influence future and growing markets, paving the way for strong UK innovation and growth.

- 1.5 This document starts by explaining the reasons why we have decided to consult on an MIR at this stage, the proposed scope of the market investigation, and the main competition concerns that we would seek to address. It then sets out the case for an MIR with reference to the legal framework and the CMA's guidance. Finally, it provides some information on our consultation and how to respond.

Our decision to consult

- 1.6 In December 2021, we published the interim report of our market study into mobile ecosystems, which set out our provisional findings and included our decision not to make an MIR at that time. We had not received any formal representations from stakeholders for us to do so and our assessment at that stage was that the proposed DMU would, in principle, be best placed to tackle the competition concerns identified.
- 1.7 As noted in the interim report, we provisionally found that all of the main areas of focus within our market study (including devices and operating systems, native app distribution, and mobile browsers and browser engines) met the MIR threshold. We also said that we would continue to keep this decision under review during the second half of the study, taking into account any relevant market or legislative developments that may arise. In particular, we highlighted that we might revisit that decision not to make a reference if the legislation required to bring the proposed new regime into force was not laid before Parliament for some time.
- 1.8 Since we made that decision, there have been several important developments:
- We received several submissions from parties with a broad range of interests, including from browser vendors, urging us to take action now.³
 - We received a large volume of responses to our interim report from individual web developers and small businesses, detailing their concerns regarding mobile browsers and mobile browser engines. This included further specific examples of how they are facing additional burdens and

³ Including the following responses to our interim report and decision not to consult on an MIR: [Response: Basecamp](#); [Response: Coalition for App Fairness](#) ; [Response: DMG Media](#) ; [Response: European Publishers Council](#) ; [Response: Guardian Media Group](#) ; [Response: Movement for an Open Web](#) ; [Response: Professional Publishers Association](#); [Response: DuckDuckGo](#) ; [Response: Mozilla](#).

restrictions and how this might affect the quality of current and future goods and services for mobile users.⁴

- We heard further concerns from a wider set of cloud gaming providers about the impact of Apple's restrictions on their business and the resulting harm to consumers.
- Through the second half of our study, we have undertaken substantial additional analysis regarding our competition concerns and the potential benefits and risks associated with potential interventions. The evidence and advice we have gathered with respect to mobile security has given us increased confidence that interventions to remove certain restrictions – in particular those relating to mobile browsers and cloud gaming services – could be implemented without compromising safety, security, or privacy over people's data.
- The government has now published its response to the consultation on the new regime which confirmed that it intends to bring in legislation for the DMU, though we now understand this will not be in the current parliamentary session (ie within the next year).⁵

1.9 Given these developments and the further work we have undertaken, we have concluded that this is the right time to take targeted action using our market investigation powers. An MIR into mobile browsers and cloud gaming will allow us to focus on specific and discrete issues and, if necessary, relatively self-contained remedies. We have received strong representations and evidence which suggest the interventions we have considered as part of this market study could be implemented effectively through a market investigation, and without the need for a package of complementary interventions in connected markets. We believe interventions in these related areas could deliver substantial benefits to UK consumers and businesses that operate online, with the potential to unlock new ways of accessing and experiencing online content such as games.

1.10 For these reasons, we are now proposing to make an MIR relating to mobile browsers and cloud gaming. The following section sets out in more detail what the scope of the proposed MIR would cover in practice.

⁴ See 'Responses to the Interim Report' on the Mobile Ecosystems case page here: [Mobile ecosystems market study](#). Around 40 of 70 responses were from web developers.

⁵ [A new pro-competition regime for digital markets - government response to consultation](#).

Scope of the proposed market investigation reference

1.11 As set out in the draft Terms of Reference published alongside this document, we propose the MIR should cover the supply of mobile browsers and mobile browser engines, and the distribution of cloud gaming services through app stores on mobile devices (and the supply of related ancillary goods and services) in the United Kingdom.

1.12 For the purposes of this reference:

- ‘mobile browsers’ means applications which enable users of mobile devices to access the world wide web;
- ‘mobile browser engines’ means the underlying technology which applications on mobile devices use to transform web page source code into content with which users can engage;
- ‘cloud gaming services’ means services which allow for the streaming of games from remote servers to users’ devices;
- ‘distribution through app stores on mobile devices’ refers to the availability of applications for download through an app store; and
- ‘mobile devices’ refers to smartphones and tablets.

1.13 We are not planning on including desktop browsers or competition between cloud gaming providers in scope of the MIR. We have not looked at either of these areas in any detail in the market study and have not identified any competition concerns in these markets.

1.14 The basis of this proposed scope is explained further below within our explanation of the case for a market investigation reference.

Our competition concerns

Mobile browsers and browser engines

1.15 As set out in our market study final report, mobile browsers are a key gateway for users and online content providers to access and distribute content and services over the internet.

1.16 Both Apple and Google have very high shares of supply in mobile browsers, and their positions in mobile browser engines are even stronger. Our market study found the competitive constraints faced by Apple and Google from other mobile browsers and browser engines, as well as from desktop browsers and native apps, to be weak, and that there are significant barriers to competition.

- 1.17 One of the key barriers to competition in mobile browser engines appears to be Apple’s requirement that other browsers on its iOS operating system use Apple’s WebKit browser engine. In addition, web compatibility⁶ limits browser engine competition on devices that use the Android operating system (where Google allows browser engine choice). These barriers also constitute a barrier to competition in mobile browsers, as they limit the extent of differentiation between browsers (given the importance of browser engines to browser functionality).
- 1.18 We also identified barriers to competition relating to:
- native apps’ use of in-app browsers;
 - pre-installation and defaults;
 - restrictions on access to functionality; and
 - revenue sharing agreements in search.
- 1.19 While some of these primarily relate to mobile browser engines, the importance of browser engines to browsers means that all barriers are relevant to understanding mobile browser competition. We explain these findings in more detail in Chapter 5 of our market study final report.
- 1.20 Apple and Google may also be able to use their market power in mobile browsers and browser engines to reinforce or strengthen their position in advertising. Browser engines control the information which is shared with advertisers and the ways in which user privacy is protected. Apple and Google have implemented, or are in the process of implementing, privacy protections which could reinforce Google’s position in search and display advertising (see Appendix J to the market study final report).⁷
- 1.21 We have concerns that, absent intervention, Apple and Google are highly likely to retain this market power in the supply of mobile browsers and browser engines for the foreseeable future. Our findings have led us to suspect that a feature or combination of features of the mobile browser and browser engine markets risk resulting in an adverse effect on competition.

⁶ Web compatibility is the browser’s ability to properly access and display the content on a particular web page. See Chapter 5 of the Mobile ecosystems market study final report for further detail.

⁷ The CMA has accepted commitments in relation to Google’s proposed ‘Privacy Sandbox’, including the involvement of the CMA and the Information Commissioner’s Office in the development and testing of Google’s proposals. [CMA, Investigation into Google’s ‘Privacy Sandbox’ browser changes, Decision to accept commitments, 11 February 2022.](#)

- 1.22 Our detailed assessment of our competition concerns and the potential interventions to address them are set out in our market study final report (see in particular Chapters 5 and 8).

Distribution of cloud gaming

- 1.23 As set out in Chapter 6 of our market study final report, Apple has effectively blocked cloud gaming apps from its App Store (permitted on Android devices and Google's app store). Cloud gaming services are a developing innovation which give users instant access to high-quality games on their mobile devices through streaming from the cloud.
- 1.24 Gaming is by far the most lucrative app category on Apple's App Store, constituting most of the revenue Apple generates through the operation of the App Store. Cloud gaming apps offer an alternative method of game discovery and distribution to the App Store. We have concerns that Apple may have an incentive to undermine the ability of cloud gaming providers to access iOS users in order to retain its market power in native app distribution and discovery on iOS.
- 1.25 Further, mobile device sales are an important revenue stream for Apple. If cloud gaming services become widely popularised, they may reduce the importance of high-quality mobile device hardware. We have concerns that Apple may have an incentive to delay the take up of cloud gaming services in order to preserve its market power in mobile devices and operating systems.

Impact on consumers

- 1.26 As we set out in Chapter 7 of our market study final report, we consider that weak competition within and between mobile ecosystems harms consumers and businesses in the UK, as well as potentially to the economy and society more broadly. This harm may be manifested through reduced innovation, higher prices, and lower quality user experiences, while potentially also impacting other aspects of quality such as privacy, security, and safety online.
- 1.27 Through our market study into mobile ecosystems, we identified a number of competition concerns in relation to mobile browsers and cloud gaming that are resulting in harms to consumers, including:
- Apple's restrictions mean that users of Apple devices face inferior experiences than those of Android devices when browsing the web or using cloud gaming services. All browsers on Apple devices have a reduced set of features compared to browsers on Android devices, while cloud gaming services are not available on iOS devices as a native app,

thus preventing Apple users from discovering and accessing innovative and advanced gaming experiences.

- These restrictions also mean that Apple faces a reduced incentive for investment and innovation. Its browser and browser engine does not face a credible threat of losing users on quality grounds, while its app store is protected from the potential competition from cloud gaming services.
- Web apps (applications which run in web browsers) have the potential to disrupt or challenge the status quo for native app distribution, in which we also found that both Apple and Google have market power in their respective ecosystems. The evidence we have gathered suggests that Apple's restrictions are currently holding back the viability of web apps across both ecosystems.⁸ This is also relevant to cloud gaming, given that at present web apps are the only way of distributing cloud gaming services on iOS devices.
- Website developers are negatively affected by Apple's restrictions and lower level of investment in its browser engine. They face additional burdens from bugs, glitches, and missing features that are likely to be passed through to consumers to some degree through increased prices or lower quality services.

1.28 In relation to both mobile browsers and cloud gaming, we found restrictions on competition are likely to be acting as a brake on innovation. Cloud gaming is one example of potentially disruptive innovation being held back by the restrictions imposed by Apple.

⁸ These restrictions include, in particular, Apple's ban on alternative browser engines, together with limits to Apple's support for web apps in its WebKit browser engine.

2. The case for a market investigation reference

- 2.0 The CMA may decide to make an MIR when it has reasonable grounds for suspecting that a feature or combination of features of a market or markets in the UK prevents, restricts, or distorts competition, and a market investigation reference appears to be an appropriate response.⁹
- 2.1 For the reasons set out above, our current view is that the markets for the supply of mobile browsers and cloud gaming in the United Kingdom are not working well and that this has resulted in significant detriment for consumers.

The legal framework

- 2.2 As set out above, the reference test is a ‘reasonable grounds to suspect’ test and does not require the CMA to have concluded that there are, in fact, features of a market which prevent, restrict, or distort competition.¹⁰
- 2.3 Where the reference test is met, the CMA can exercise its discretion, to make an MIR. In our guidance on making MIRs, we set out four criteria which help to guide our exercise of that discretion:
- (a) The scale of the suspected problem, in terms of its adverse effect on competition, is such that a reference would be an appropriate response.
 - (b) There is a reasonable chance that appropriate remedies would be available.
 - (c) It would not be more appropriate to address the concerns through undertakings in lieu of a reference (UILs).
 - (d) It would not be more appropriate to address the competition problems through alternative powers available to the CMA or through the powers of sectoral regulators.¹¹
- 2.4 In considering these factors, the CMA recognises that an MIR leads to significant costs, both to the CMA itself (and the public purse) and to the parties involved.

⁹ [Section 131](#) (2) of the EA02 sets out what is to be construed as a feature for the purposes of Part 4 of EA02.

¹⁰ This point was made clear by the [Competition Appeal Tribunal in Association of Convenience Stores v OFT](#), [2005] CAT 36, paragraph 7.

¹¹ [Guidance about the making of references under Part 4 of the Enterprise Act](#), OFT 511, paragraph 2.1.

The reference test

The markets

2.5 In making a MIR, the CMA must specify the goods or services in relation to the supply or acquisition of which there may be an adverse effect on competition (AEC). However, as stated in its published guidance on the making of MIRs, the CMA is not obliged to provide a precise definition of the market or markets to which any MIR relates.¹²

Mobile browsers

2.6 Mobile browsers are a type of mobile application that enables users of mobile devices to access and search the internet and interact with content on the open web.¹³ Other than app stores, browsers are the most important way for users of mobile devices to access content and services over the internet, reportedly spending a higher proportion of their time online on browsers than on any other single native app.¹⁴

2.7 Browsers comprise two main elements:

- A browser engine, which transforms web page source code into web pages (or web apps) that people can see and engage with.
- A branded user interface (UI), which is responsible for user-facing functionality such as favourites, browsing history and remembering passwords and payment details. The default search engine is set as part of the browser UI.

2.8 Browsers are also available on desktops (and other devices such as games consoles) as well as on mobile devices. However, as the principal concerns we have identified (such as Apple's WebKit restriction) relate to mobile devices, we consider it appropriate to refer for further investigation the supply of mobile browsers in the UK.¹⁵

¹² [Market Investigation References guidance](#), OFT511 paragraph 4.8.

¹³ Web browsers provide the same function on desktop and other devices.

¹⁴ Kargo & Verto Analytics - Web vs App report 2019. The report says that approximately 17% of users' time is spent on mobile web (Safari and Chrome), with the next closest apps being Facebook with 14% and YouTube with 8%.

¹⁵ While the supply of mobile web browsers is carried out on a worldwide basis, for the purposes of this market investigation reference we are concerned only with the UK (OFT511, paragraph 4.11).

Mobile browser engines

- 2.9 The browser engine is responsible for web compatibility (ie the browser's ability to properly access and display the content on a particular web page) and determines the range of possible user inputs (eg camera, microphone). As a result, browser engines control the type of content that can be developed on the web, and significantly influence the products and services which consumers can access online.
- 2.10 Web content can be accessed through dedicated browsers or through native apps' in-app browsers.¹⁶ Examples of native apps with in-app browsers include a large variety of apps, including chat apps such as Snapchat, online social networks such as Facebook, search widgets such as Google Search, and email clients such as Gmail. Dedicated browsers and in-app browsers use the same set of browser engines controlled by Google (Blink), Apple (WebKit) and Mozilla (Gecko).
- 2.11 We considered whether it would be appropriate to include within the scope of the reference the supply of mobile browser engines to native apps (as 'in-app browsers'). On each operating system, apps (which use in-app browsers) and dedicated browsers can choose between the same set of major browser engines. Therefore, we consider that in investigating mobile browser engines, it is appropriate to include the supply of browser engines to in-app browsers for the purposes of our market investigation reference.
- 2.12 As was the case with browsers, the concerns we heard regarding browser engines were specific to those for mobile devices (rather than desktop browser engines). As such, we have not included desktop browser engines within the proposed scope of the referred market.
- 2.13 Therefore, we consider it appropriate for the referred market to relate to the supply of mobile browser engines in the UK.¹⁷

Cloud gaming distribution

- 2.14 Cloud gaming services are those which allow users to play games run on remote cloud servers and streamed to the user's mobile device. Previously, users would need to download individual games (ie via individual apps) to play them on mobile devices, and the sophistication of these games would be

¹⁶ In-app browsers typically have a reduced feature set compared to a dedicated browser app, with features (such as push notifications) typically arriving later on in-app browsers than on dedicated browsers. Steiner, Thomas. 'What is in a web view: An analysis of progressive web app features when the means of web access is not a web browser.' Companion Proceedings of The Web Conference 2018. 2018.

¹⁷ While the supply of mobile web browser engines is carried out on a worldwide basis, for the purposes of this market investigation reference we are concerned only with the UK part of it (OFT511, paragraph 4.11).

limited by the hardware capabilities of the user's device. Cloud gaming services remove this restriction, and as a result can provide users of mobile devices with access to high-quality games which would otherwise only be available on other platforms (such as video game consoles or computers).

- 2.15 Cloud gaming services can be distributed to users on mobile devices in one of two ways. They can be provided as native apps, which are distributed through app stores, or they can be provided as web apps, which users can access through browsers.
- 2.16 Cloud gaming services can also be accessed on various non-mobile devices, including computers, gaming consoles, dedicated cloud gaming devices and smart TVs. The concerns we heard regarding distribution of cloud gaming services were focussed on distribution on mobile devices through app stores, and as such we have not included distribution of cloud gaming on other platforms within the scope of the referred market.
- 2.17 Therefore, we consider it appropriate for the referred market to relate to the distribution of cloud gaming services through mobile device app stores in the UK.

The features in these markets

- 2.18 Based on the evidence and the analysis set out in our market study final report (see Chapter 5), we consider that there are reasonable grounds for suspecting that one or more of the following features, alone or in combination prevent, restrict, or distort competition in the supply of mobile web browsers and mobile browser engines (and related ancillary goods and services) in the UK:
- Apple mandating the use of WebKit for browsers on iOS, controlling the boundaries of quality and functionality of all such browsers. This limits the potential for rival browsers to differentiate themselves, materially inhibits the functionality of web apps and prevents third-party web engines from serving browsers on iOS.
 - web compatibility and network effects mean that it is more difficult for smaller browser engines to compete effectively and for new browser engines to enter on Android (where Google allows browser engine choice).
 - Apple and Google's influence of user behaviour through pre-installation, default setting, and choice architecture, designed to maximise the use of their own browsers.

- Apple and (to a lesser extent) Google restricting access to functionality that affects alternative browsers.
- revenue sharing agreements which dampen incentives for competition between browsers on iOS.

2.19 Based on the evidence and the analysis set out in our market study final report (see Chapter 6), we also consider that there are reasonable grounds for suspecting that the following feature, alone or in combination with others which we may identify, prevents, restricts, or distorts competition in the distribution of cloud gaming services through app stores in the UK:

- Apple restricting the ability of cloud gaming providers to access the App Store. This weakens their ability to attract users and degrades the user experience that they can offer.

Provisional view on the reference test

2.20 For the reasons set out above, our provisional view is that there are reasonable grounds to suspect that one or more features (alone or in combination) in relation to the supply of mobile browsers and cloud gaming (and related ancillary goods and services) prevent, restrict, or distort competition in the UK and that the reference test is met. Based on the evidence set out in Chapter 7 of the final report on the harms from weak competition in these markets, we also have reasonable grounds to suspect that any adverse effect on competition resulting from the features that we have identified may lead to significant consumer harm.

2.21 Having reached this provisional view, we now go on to consider the factors relevant to the exercise of the CMA's discretion to make an MIR.

Views on the appropriateness of a reference

First criterion: scale of the suspected problem

2.22 The CMA recognises that an MIR may impose a burden on the businesses concerned and, in addition, requires a significant commitment by the CMA itself in particular where any remedies imposed require active ongoing oversight or monitoring. It will only make an MIR when it has reasonable

grounds to suspect that the adverse effects on competition of features of a market are significant.¹⁸

2.23 In determining the scale of the suspected problem, our guidance identifies three factors of particular significance:

- a) the size of the market;
- b) the proportion of the market affected by the features; and
- c) the persistence of those features.¹⁹

The size of the market

2.24 In the UK, mobile browsers had around 55 million weekly active users in 2021, making them amongst the most widely used apps and the key gateway for people to access the web from mobile devices.²⁰ In the case of browsers, high usage is followed by high commercial activity, as sales on browsers account for a material share of mobile retail commerce, which in turn represents a substantial and growing share of e-commerce and total retail sales in the UK.²¹ Therefore, browsers are an important gateway for online content providers and businesses with an online presence to reach potential customers.

2.25 As set out above, in their respective mobile ecosystems, both Apple and Google have very high shares of browser usage. Their combined share of supply on mobile devices in the UK is around 90%, with Safari having a usage share of close to 50% and Chrome above 40%. Samsung Internet is the only other browser with a share above 5%.²²

2.26 Most browsers use one of the two main underlying browser engines, Apple's WebKit (mandated on all iOS devices) and Google's Blink (most browsers on Android use). Overall, in 2021, at least 97% of all browsing in the UK was performed using Blink and WebKit.²³

¹⁸ [Guidance about the making of references under Part 4 of the Enterprise Act](#), OFT 511, paragraph 2.27.

¹⁹ [Guidance about the making of references under Part 4 of the Enterprise Act](#), OFT 511, paragraph 2.28.

²⁰ App Annie weekly active users data, provided by a browser vendor; Kargo & Verto Analytics - Web vs App report 2019. The report says that approximately 17% of users' time is spent on mobile web (Safari and Chrome), with the next closest apps being Facebook with 14% and YouTube with 8%.

²¹ In the first quarter of 2018 sales on browsers accounted for around half of the mobile retail commerce in Europe. Criteo, 2018, [Global Commerce Review](#), Q1 2018. Statista, 2021, [Mobile commerce in the United Kingdom \(UK\)](#).

²² Statcounter page views data, [Mobile & Tablet Browser Market Share United Kingdom | Statcounter Global Stats](#), (retrieved 7 April 2022).

²³ App Annie browser usage minutes data provided by a browser vendor. Statcounter, [Mobile & Tablet Browser Market Share United Kingdom | Statcounter Global Stats](#).

- 2.27 The number of users of cloud gaming services in the UK is currently small but is expected to grow quickly. In January 2022, across the providers contacted within our market study into mobile ecosystems, there were around 800,000 monthly active users of such services in the UK on all devices, around 215,000 of which were on Android or iOS, with the remainder using other devices such as consoles or PCs. Worldwide, there were just over 10 million monthly active users, with around 3.8 million on Android and iOS.²⁴ Indeed, Microsoft alone says that its service has now streamed games to over 10 million people.²⁵
- 2.28 Reports by third parties, submitted by Apple, indicate that worldwide, revenue from cloud gaming services was expected to grow quickly with a CAGR of 65%, and that the potential users of cloud gaming services across all devices would grow to 125 million by this year, however the distorting features of the market mentioned above may slow such growth.²⁶
- 2.29 The wider gaming market may be indicative of the potential for cloud gaming's growth. In 2021, gaming generated around £4.3 billion in revenue in the UK (£1.5 billion from mobile gaming). Over the last decade, this figure has grown quickly with a CAGR of 7.8%.²⁷

The proportion of the markets affected by the features

- 2.30 As discussed above, both Apple and Google have very high shares of browser usage (combined around 90% in the UK) and browser engine usage (combined at least 97% in the UK). In addition, our assessment of competition suggests that the main barriers to competition cover substantial proportions of the markets under consideration. For example, over half of mobile devices in use in the UK are affected by Apple's WebKit restriction, and either Safari or Chrome are preinstalled on almost all mobile devices.
- 2.31 The restrictions we have identified on the distribution of cloud gaming services apply to all Apple mobile devices, which as noted above account for over half of mobile devices in use in the UK. Apple devices also account for the majority of mobile gaming revenues in the UK.²⁸

²⁴ Mobile ecosystems market study final report, Chapter 6.

²⁵ [Microsoft says more than 10 million people have streamed games on Xbox Cloud Gaming - The Verge](#)

²⁶ Mobile ecosystems market study final report, Chapter 6.

²⁷ [ENTERTAINMENT TARGETS £10BN IN UK SALES IN 2022 AS 2021 PRODUCES NINTH SUCCESSIVE YEAR OF GROWTH - ERA \(eraltd.org\)](#)

²⁸ According to data from Sensor Tower, gaming app developers earned around \$760 million from iOS users and around \$600 million from Android users in the UK in 2021.

The persistence of those features

- 2.32 The supply of mobile browsers and of mobile browser engines is highly concentrated, and this has increased over time. Safari and Chrome’s combined share of supply on mobile devices in the UK increased from around 80% in 2015 to around 90% in 2022.²⁹ WebKit and Blink’s combined very high share of supply on mobile devices in the UK further increased in 2020 when Microsoft discontinued its proprietary browser engine and started to use Blink.³⁰
- 2.33 The above barriers to competition are similarly persistent, for example the browser engine restriction on iOS has been in place since 2008. Based on the evidence we have obtained so far, we expect that these features will persist (both in the UK and internationally) as there is currently no evidence to suggest that the dynamics of competition would change in the supply of mobile browsers and browser engines. Our analysis of entry suggests that there is limited prospect of entry given the barriers we have identified.
- 2.34 The restrictions on competition in cloud gaming distribution, while more recently imposed, also appear to be persistent. Apple introduced guidelines in 2018 that prevented cloud gaming services from being distributed through its App Store. Although Apple introduced new guidelines in 2019 to technically allow cloud gaming apps, as discussed above these included caveats which prevent cloud gaming apps from being feasible to develop for the App Store in practice, and Apple has not indicated any willingness to remove these restrictions.³¹

Provisional conclusion on first criterion

- 2.35 We consider that the scale of the suspected problems in relation to mobile browsers and cloud gaming services, in terms of the adverse effects on competition, are highly significant in deciding on the appropriateness of an MIR.

Second criterion: availability of appropriate remedies through an MIR

- 2.36 The availability of remedies and the prospective value of a market investigation is part of the CMA’s assessment when considering whether to make an MIR. This includes consideration of the availability and likely ‘complexity’ of remedies that could address the concerns identified to date –

²⁹ Mobile ecosystems market study final report, Chapter 5.

³⁰ Ibid.

³¹ See [App Store Review Guidelines - Apple Developer](#) for details on Apple’s game streaming provisions.

for example, whether potential remedies could be implemented in an effective manner, and broader factors such as possible implementation timeline and the need for any ongoing monitoring and refinement over time. This is not however an assessment of the ultimate need for or appropriateness of any individual remedies which will be for the inquiry group appointed to carry out the MIR to determine.

2.37 At this stage, we consider there may in principle be a number of appropriate remedies to the potential competition problems and resulting detrimental effects we have identified. A non-exhaustive list of potential remedies that a market investigation could consider includes:

- removing Apple's restrictions on competing browser engines on iOS devices;
- mandating access to certain functionality for browsers (including supporting web apps);
- requiring Apple and Google to provide equal access to functionality through APIs for rival browsers;
- requirements that make it more straightforward for users to change the default browser within their device settings;
- choice screens to overcome the distortive effects of pre-installation; and
- requiring Apple to remove its App Store restrictions on cloud gaming services.

2.38 In carrying out an MIR, the CMA has wide-ranging powers to accept undertakings or impose an Order, as well as to make recommendations. As highlighted by the examples above, we consider that there are a number of potential appropriate remedies within the scope of such powers, and that some of these could be complementary in nature. Feedback from affected stakeholders such as browser vendors, web developers and cloud gaming service providers suggest these interventions would deliver substantial benefits and improvements to the functioning of the markets.

2.39 We therefore consider that appropriate remedies are likely to be available. As with all interventions of this potential scale and significance, the design and any ongoing involvement by a regulatory authority would need to be considered carefully prior to implementation.

Third criterion: the availability of undertakings in lieu of a reference

- 2.40 The CMA has the power under section 154 of the Enterprise Act 2002 to accept undertakings in lieu of a reference (UILs) instead of making an MIR. Before doing so, the CMA is obliged to: ‘have regard to the need to achieve as comprehensive a solution as is reasonable and practicable to the adverse effect on competition concerned and any detrimental effects on customers so far as resulting from the adverse effect on competition’.³² As the CMA’s guidance notes, such UILs are ‘unlikely to be common’, but ‘where an adverse effect on competition arises from the conduct of a very few firms there may be more scope for accepting undertakings in lieu’ than ‘when the adverse effects on competition arise from market features involving several firms or industry-wide practices’.³³
- 2.41 At this stage, we cannot exclude the possibility that UILs may be offered following publication of this consultation. If this were the case, we would consider them.

Fourth criterion: alternative powers available to the CMA or to sectoral regulators

- 2.42 Finally, we have carefully considered whether alternative powers are available to us, or others,³⁴ and if so, whether it would be more appropriate to use those to address the features we have identified.
- 2.43 However, for the reasons set out in this document, we have provisionally decided that an MIR is the most appropriate tool to address our concerns, in particular given its focus on remedying AECs and their harmful effects in the future, rather than seeking redress – through a financial penalty or otherwise – for past conduct (for which enforcement action under the CMA’s other powers might be more appropriate).
- 2.44 We have considered the CMA’s powers in relation to competition law prohibitions on anticompetitive agreements or abuse of a dominant position and in relation to consumer law, before considering the powers available to other regulators. We have not, at this stage, identified any grounds to suggest that it would be more appropriate or effective to address one or more of the features or their effects using its competition or consumer powers.

³² [Section 154\(3\) of the EA02](#).

³³ [Guidance about the making of references under Part 4 of the Enterprise Act](#), OFT 511, paragraph 2.21.

³⁴ For example, other regulators.

- 2.45 We also considered the potential role of other concurrent regulators, and the potential use of their powers to address the concerns we have identified. Having done so, we believe the CMA remains best placed to take forward action in this area.
- 2.46 We believe that an MIR will allow us to take into account all of the factors which give rise to a potential AEC and would enable us to do so in a timely manner.
- 2.47 We do not currently consider alternative powers, or another regulator could more appropriately address the concerns we have identified.

Provisional conclusion on the appropriateness of a reference

- 2.48 For the reasons set out above, we provisionally consider that it is appropriate to exercise our discretion to make an MIR in relation to mobile browsers and cloud gaming.

Provisional decision

- 2.49 In light of the information set out above, we propose to make an ‘ordinary’³⁵ MIR within the meaning of section 131(6) of the Enterprise Act 2002 in respect of the supply of mobile browsers and cloud gaming in the UK.

³⁵ As opposed to a cross market reference – section 131A(2A) and (6) of the EA02. See CMA3 paragraphs 2.31-2.37

3. Consultation

3.0 Given our provisional conclusion that the reference test has been met and our view that it would be appropriate for us to exercise our discretion to make a reference in relation to the supply of mobile browsers and cloud gaming in the UK, we are now commencing a period of consultation.

3.1 We welcome representations from interested parties on the proposed reference decision set out in this consultation. We wish to stress the importance of the consultation process in assisting our decision making and urge interested parties to engage with the consultation. In doing so, respondents may wish to consider the following questions:

- 1) Do you consider that our analysis is correct with respect to the suspected features of concern in the supply of mobile browsers and cloud gaming in the UK?
- 2) Do you consider that our analysis is correct with respect to the reference test being met in relation to the supply of mobile browsers and cloud gaming in the UK?
- 3) Do you agree with our proposal to exercise the CMA's discretion to make a reference in relation to the supply of mobile browsers and cloud gaming in the UK?
- 4) Do you consider that the proposed scope of the reference, as set out in the draft terms of the reference published alongside this document, would be sufficient to enable any adverse effect on competition (or any resulting or likely detrimental effects on customers) caused by the features referred to above to be effectively and comprehensively remedied?
- 5) Do you have any views on our current thinking on the types of remedies that a MIR could consider (see above and Chapter 8 of the market study final report)? Are there other measures we should consider?
- 6) Do you have any views on areas where we should undertake further analysis or gather further evidence as part of an MIR in relation to the supply of mobile browsers and cloud gaming?

3.2 We would particularly welcome any specific evidence from respondents in support of their views.

Such comments should be provided no later than **5:00pm on 22 July 2022** to:

Email: browsersandcloud@cma.gov.uk

- 3.3 Our intention is to publish on the investigation's case page anonymised submissions from individuals, except those responses marked as confidential. If you would prefer your name to be published, please indicate this in your response.
- 3.4 We intend to publish all responses from businesses and other organisations on the market investigation's case page, except those responses marked as confidential. Respondents may request that their response be kept confidential.
- 3.5 If you would like your response to remain confidential, clearly mark it to that effect and include the reasons for confidentiality. Please restrict any confidential material to the appendices to your response.
- 3.6 We will redact, summarise, or aggregate information in published reports where this is appropriate to ensure transparency whilst protecting legitimate consumer or business interests. While the information you provide will primarily be used for the purposes of the consultation on whether a reference should be made, and if so in what form, where appropriate we may also use information you provide in relation to the CMA's other functions. For example, we may use the information you provide in connection with enforcement action using our consumer or competition enforcement powers, or we may share your information with another enforcement authority (such as local Trading Standards Services) or with another regulator for them to consider whether action is necessary.
- 3.7 Personal data received in the course of this consultation will be processed in accordance with our obligations under the UK GDPR, the Data Protection Act 2018 and other legislation designed to protect individual privacy.
- 3.8 Our use of all information received (including personal data) is subject to Part 9 of the Enterprise Act 2002 and the Freedom of Information Act 2000. Further information on the CMA's obligations under this legislation can be found in the CMA guidance: 'Transparency and disclosure: statement of CMA's policy and approach (CMA6).³⁶

³⁶ See [Transparency and disclosure](#): Statement of the CMA's policy and approach, CMA6.

3.9 Following careful consideration of the responses to this consultation, we will publish a final decision on whether or not to make an MIR in respect of the supply of mobile browsers and cloud gaming in the UK.