Google

Google's Response to Working Paper #5:
The Role of Choice Architecture in Competition in the Supply of Mobile Browsers

31 July 2024

Introduction & Summary

1. Google welcomes the opportunity to respond to the CMA's Working Paper on the role of choice architecture in competition in the supply of mobile browsers (**WP5**).

2. WP5 analyses six "choice architecture" practices on Android and iOS: (i) the preinstallation of browsers on Android/iOS devices; (ii) the placement of browsers on devices' out-of-the-box home screens; (iii) the devices' initial default browsers; (iv) the ease with which users can switch default browsers; (v) prompts and push notifications that encourage users to switch default browsers; and (vi) the ability of users to uninstall preinstalled browsers.

3. WP5 suggests that, taken together, these practices "*mean that consumers may make less effective choices about which browser to use on their mobile device, or experience difficulty or friction in exercising choice between the use of different browsers.*"[1] According to WP5, this is because these practices may cause or exacerbate consumers' low awareness of, and engagement with, their choice of browsers. WP5 suggests that this in turn may restrict competition between browsers on iOS and Android, resulting in more consumers using Safari and Chrome.

4. This response explains why WP5's approach is flawed and based on factual misconceptions when it comes to Android. Four points bear emphasis at the outset:

5. **First, WP5 proceeds on the basis of several critical factual errors.** This response identifies factual errors that, if corrected, should change WP5's preliminary conclusions on Google's practices. For example, WP5 overlooks that:

    - Over 50% of Android devices come with at least two browsers preinstalled, and a non-Chrome browser set as default and placed in the "hotseat."[2] This

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1 WP5, ¶1.5.

2 The "hotseat" refers to the bottom row of apps on a device's home screen. It is also referred to as the "Application Dock."

contradicts WP5's assertion that Chrome is "*often … pre-set as a default on the device*"[3] and "*usually set as the default browser*."[4]

- The user journey for switching default browsers on Android is intuitive and well-signposted, which third-party browsers have confirmed.[5] This undermines WP5's suggestion that the journey may be unduly complex, which rests solely on the number of steps involved.[6]

- Users can uninstall Chrome such that it is invisible and stops running in the background, collecting any data, or updating automatically. This undermines WP5's suggestion that "*[t]he inability to uninstall Chrome may lead to the 'endowment' effect*."[7]

6. **Second, WP5's preliminary findings with respect to the six choice architecture practices are contradicted by evidence, including from the CMA's own research**. WP5 fails to take account of evidence provided to it by market participants—and its own consumer research—that contradict its assertion that users lack awareness of and engagement with browser choice, leading to less browser competition.

7. Instead of consumers becoming "stuck" with whichever browser is preinstalled, set as default, or placed prominently on devices' home screens, evidence shows that the majority of users know that other browsers are available, download alternative browsers, know how to switch defaults and find it easy to do so, and rearrange the position of browsers on their home screens to suit their own needs. High consumer confidence in switching browsers negates any potential concern that Google's practices restrict competition. WP5 gives insufficient weight to this consideration.

8. **Third, WP5 fails to establish that the six choice architecture practices contribute to low consumer awareness of and engagement with their choice of browsers**. WP5's overarching theory of harm is that the analysed practices result in or exacerbate reduced consumer awareness of and engagement with browsers that are not preinstalled, set as default, or prominently placed, which in turn restricts browser competition.[8] Even assuming that UK consumers do lack awareness of and engagement with browsers, WP5's analysis does not provide evidence showing that the identified practices contribute to this.

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3 WP5, ¶5.4(c).

4 WP5, ¶5.4(d).

5 WP5, ¶4.54.

6 WP5, ¶4.48.

7 WP5, ¶4.73.

8 WP5, ¶5.7.

9. In fact, the CMA's own consumer research supports the opposite conclusion: of the users who had *not* changed their default browser, the most popular reason was that their default browser was their preferred browser.[9] This means that many consumers *benefit* from having a match between their preferred browser and a browser that is preinstalled and/or set as default. WP5 presents no evidence of increased consumer awareness or engagement in any realistic counterfactual.

10. WP5 also ignores certain aspects of the Android ecosystem, including a "one-tap-switch" default prompt for browsers, that serve to *increase* user awareness and engagement, rather than inhibit them. The CMA's research indicates that users find such prompts helpful.[10]

11. **Fourth, WP5's assumption that Google's choice architecture practices involve self-preferencing lacks an evidential basis**. Throughout WPs 1 and 5, the CMA alleges that Google's and Apple's choice architecture practices constitute "self-preferencing."[11] On Android, however, approximately 90% of devices sold in the UK are controlled by OEMs, not by Google.[12] OEMs decide which apps are preinstalled and set as default, and where they are placed on users' home screens out-of-the-box. And OEMs are free to modify the user journey for switching defaults. There can be no self-preferencing in these circumstances, as OEMs are incentivised to configure their devices in ways that benefit their users and help them sell more devices in competition with each other and iOS, and are not restricted by the Android operating system from doing so. They make these decisions in response to users' needs.

12. Accordingly, WP5 has not established on the balance of probabilities that Google's practices give rise to an adverse effect on competition (**AEC**). WP5 proceeds on the basis of a substantial error about Chrome's status as the default and prominently placed browser on Android devices. More generally, WP5's theories of harm in connection with Android are unsupported by evidence of harm to consumers. Indeed, in most instances WP5's theories are *disproved* by the CMA's own research. In other places they are based on misunderstandings of Android's choice architecture.

13. We develop these points in the rest of this response, which is structured as follows:

    - **Section I** sets out how, taking proper account of the evidence, none of the six choice architecture issues raised in WP5 as they pertain to Android or Chrome gives rise to an AEC:

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9 WP5, Figure 2.4; ¶4.58.

10 *See* WP5, ¶4.70 (discussed below in **Section I.F**).

11 See WP1, ¶2.57; WP5, ¶¶2.5, 2.24, 4.74.

12 [*Confidential*], 2023.

- **Section I.A** explains how Chrome's preinstallation on certain Android devices does not give rise to an AEC.
- **Section I.B** explains how Chrome's placement on certain Android devices does not give rise to an AEC.
- **Section I.C** explains how Chrome's default status on certain Android devices does not give rise to an AEC.
- **Section I.D** explains how the default switching journey on Android devices does not give rise to an AEC.
- **Section I.E** explains how WP5's emerging thinking on uninstallation of Chrome on Android devices rests on a factual misunderstanding. Users can uninstall Chrome, they just cannot fully delete it for reasons relating to device integrity.
- **Section I.F** explains how Chrome's prompts and marketing promotions do not give rise to an AEC.

- **Section II** sets out how, if the CMA concludes that Google's Android agreements do give rise to an AEC, no remedy should be imposed because the agreements result in relevant customer benefits (**RCBs**).

I. The Choice Architecture Issues Raised in WP5 Regarding Chrome Do Not Give Rise to an AEC

A. Chrome's Preinstallation on Certain Android Devices Does Not Give Rise to an AEC

14. WP5 finds that preinstallation of an application "*may lead to user inertia, where users never make an active choice about the browser they prefer and thus use the readily available browser on the device.*"[13] It also finds that preinstalled apps may benefit from an endowment effect whereby "*[u]sers may believe that browsers are pre-installed on mobile devices because they are endorsed or recommended by the device manufacturer because they provide a better user experience, which may not be the case.*"[14]

15. WP5 suggests that this could impact browser competition because "*looking for [other browsers] would require additional effort and attention from users, diminishing the out-of-the-box experience.*"[15]

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[13] WP5, ¶2.8.

[14] WP5, ¶2.8.

[15] WP5, ¶2.10.

16. In this context, WP5 highlights potential concerns about the preinstallation of Chrome on UK Android devices.

17. Chrome is preinstalled on UK Android devices under Google's agreements with Android OEMs. But preinstallation of Chrome cannot give rise to an AEC for the following reasons:

- First, WP5's suggestion that preinstallation contributes to consumer inertia and lack of awareness of and engagement with browser choice is unsupported by evidence. Android users download alternative browsers when they prefer to use an alternative.
- Second, Google's agreements leave OEMs free to preinstall alternative browsers instead of or alongside Chrome, and Chrome's preinstallation on their devices reflects a competitive process.
- Third, most UK Android devices come preinstalled with more than one browser.

18. We expand on these points in more detail below.

19. **WP5 has not established that preinstallation of Chrome contributes to consumers' lack of awareness of and engagement with browser choice**. WP5's suggestion[16] that preinstallation contributes to consumers' lack of awareness of and engagement with browser choice is unsupported by evidence. WP5 discusses download rates of non-Chrome browsers on Android devices and users' motivations for downloading a rival browser.[17] This evidence shows, however, that users are confident in their ability to download alternative browsers if they want to. Any lack of downloading alternative browsers is therefore more likely to be attributable to users making an active choice to use Chrome because they prefer to do so. Four points confirm this:

- ***First, Android users understand that they can easily download alternative browsers to those that are preinstalled***. Android users are aware that they can download additional browsers if they do not like the ones that are preinstalled. Verian's research found that 85% of UK users feel confident in their ability to download a new web browser without assistance.[18] WP5 therefore finds that among users who had *not* switched browsers, there was *"no concern"* about having a preinstalled browser

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16 WP5, ¶¶2.9-2.10.

17 WP5, ¶¶4.14, 4.18, and 4.19.

18 Verian Quantitative Consumer Research Report, slide 27 (comprising "Probably" (28%) and "Definitely" (57%)).

because "*if [the user] cared about the browser they used they could open a website in whichever browser they preferred*."[19]

- ***Second, Android users can and do make active choices to download third-party alternative browsers***. Users' understanding of their freedom to download additional browsers is reflected in the significant number of downloads of third-party browsers on Android (21 million times in the UK since 2017). WP5 does not consider browsers' ability to compete successfully by encouraging users to download them.

  In addition, WP5 does not refer to or take into account the browser choice screen that has been shown on Android phones since 2019 as agreed with the European Commission following its *Google Android* decision.[20] This choice screen appears the first time a user opens the Play Store and provides a prompt for users to download additional browsers. This prompt has been shown [*Confidential*] in the UK since April 2019.[21] WP5 should have considered the relevance of this choice screen to its analysis, especially as the Mobile Ecosystem Market Study (**MEMS**) Final Report "*welcome[d] [our] introduction of the choice screens*."[22]

- ***Third, users choose Chrome based on its quality***. WP5 acknowledges that "*motivations for downloading a new browser were affected by whether the 'alternative' downloaded was Chrome*."[23] In other words, if Chrome is not preinstalled, users download it. This provides strong evidence—which WP5 fails to consider—that users who do not download alternative browsers on devices on which Chrome is preinstalled are motivated by their preference for Chrome (or another preinstalled browser).[24] This needs to be taken into account as one of the reasons why preinstallation does not result in an AEC. The following evidence confirms this:

  - Chrome had a share on Windows of 69% in the UK in Q1 2024, despite Edge being the exclusively preinstalled and default browser.[25]

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19 WP5, ¶4.19.

20 Paul Gennai, Presenting search app and browser options to Android users in Europe (18 April 2019).

21 [*Confidential*].

22 MEMS Final Report, Appendix G, ¶56.

23 WP5, ¶4.18.

24 Google provides evidence of Chrome's superior quality in response to WP1.

25 CloudFlare.

- According to the CMA's research, over half of UK iOS users have installed Chrome on their devices.[26] It also finds that users that download Chrome are motivated by Chrome offering a "*better user experience*," their familiarity with Chrome, and their use of Chrome on another device.[27] And it finds that where users download Chrome as it was not preinstalled, this is motivated by the users' preference for Chrome (*e.g.*, better user experience than other browsers, syncing across devices).[28]

- ***Fourth, download rates of apps that compete with preinstalled apps demonstrate a lack of user inertia and endowment effect relating to preinstalled apps***. If WP5's theory of harm that preinstallation contributes to lack of user awareness of and engagement with competing alternatives is correct, one would expect to see similar patterns across app categories. Consumer behaviour in other app categories demonstrates, however, that users *are not* held back by inertia or the endowment effect. They download apps that compete with preinstalled apps when they prefer alternatives. For example:[29]

  - Spotify is used on 30% of UK Android devices compared to YouTube Music used on only 13%, despite YouTube Music being pre-installed on all Android GMS devices.

  - WhatsApp Messenger is used on 76% of UK Android devices compared to Google Messages used on 49%, despite Messages being pre-installed on all Android GMS devices.

20. **Chrome is preinstalled on OEM devices following a competitive process**. WP1 observes that "*mobile devices using the Android operating system generally come with Google's Chrome pre-installed.*"[30] WP5's analysis fails however to consider that preinstallation of Chrome is the result of a competitive process that rivals can compete with to obtain preinstallation either instead of or alongside Chrome:

    - ***First, Google's agreements are optional, device-by-device, and non-exclusive***. It is at OEMs' discretion as to whether they want to enter into a Chrome License Agreement, Placement Agreement and/or Revenue

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26 WP5, ¶3.17.

27 WP5, ¶4.18.

28 WP5, ¶2.13.

29 Source: Data.ai (formerly App Annie). Usage % = percentage of devices in the App Annie data that are active on this app for at least one day over the past 28 days (considered a monthly active user).

30 WP1, ¶2.59(a).

Share Agreement (**RSA**) with Google.[31] As WP5 recognises,[32] those agreements do not preclude the preinstallation of rival browsers instead of or alongside Chrome.[33] OEMs can preinstall Chrome on none, one, some, or all of their devices, and equally enter into agreements with other browser vendors in respect of none, one, some, or all of their devices.[34]

- ***Second, rival browsers do not need to "offset" Google's agreements to obtain preinstallation on OEM devices***. WP5 rejects the competitive opportunity that rival browsers have to enter into preinstallation agreements with OEMs because "*any incentive agreements they developed would have to compete with the agreements Google currently has in place*."[35] However, rival browsers *do not need* to offset Google's payments to achieve preinstallation on Android devices. They can pay OEMs for preinstallation alongside Chrome. WP5 implies that competition only takes place when rivals bid successfully for *exclusive* preinstallation, instead of the more competitive outcome where multiple browsers are preinstalled and users have more choice out-of-the-box.

- ***Third, OEMs act in their users' interests, including by preinstalling high-quality browsers***. WP5 finds that OEMs "*tend to avoid overloading devices with unnecessary applications at factory setup (ie 'bloatware')*."[36] WP5 does not, however, recognise that in some cases the preinstalled browser may match with the user's preferred choice, which was the most frequent reason users gave in the Verian consumer survey for not switching the default browser.[37] This is not surprising, as OEMs have a clear incentive to preinstall the browser(s) they consider their users will prefer.

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31 [*Confidential*].

32 WP5, ¶4.4 ("*[Google's] agreements do not preclude OEMs from installing their own or other third-party applications.*").

33 [*Confidential*].

34 In addition, WP5 suggests (at ¶2.50) that "*one avenue to increase user engagement with its search engine is by providing multiple access points to search, one of those being the Chrome browser*." This ignores, however, that since March 2020 Google has shown a choice screen in the UK during the set-up wizard of newly activated Android devices which sets the default search engine in Chrome and the search widget on the home screen to the search engine selected by the user.

35 WP5, ¶A.32. *See also* WP5, ¶4.7 ("*Other browser vendors have stated that the payments Google makes through these agreements would be difficult for them to match, meaning that such agreements are not economically viable for them.*").

36 WP5, ¶4.17.

37 WP5, ¶2.40 (Figure 2.4).

In addition, preinstalling two or more browsers does not mean that one of them is "bloatware." This concept is shorthand for an app that users dislike. If an OEM decides not to preinstall an app that users consider to be bloatware, that reflects competition on the merits. Indeed, OEMs are likely to preinstall browsers that they consider the majority of their users will prefer to improve the out-of-the-box experience and minimise friction for users. This provides a clear explanation for why a significant proportion of users do not choose to switch away from a preinstalled default browser.

21. **In practice, Android devices preinstall more than one browser**. WP5 takes insufficient account of competitive opportunities that rival browsers have to be preinstalled on OEMs' devices. This includes OEMs' own browsers, which represent a significant source of browser competition on Android.[38] Indeed, evidence shows that OEMs exercise their freedom under Google's agreements to preinstall an additional browser alongside Chrome:

- Samsung preinstalls Samsung Internet on its Android devices, which represent approximately 60% of UK Android device shipments.[39]
- Xiaomi preinstalls Mi Browser on its Android devices, which represent approximately 6% of UK Android device shipments.
- Oppo preinstalls Internet Browser on its Android devices, which represent approximately 5% of UK Android device shipments.
- Google estimates that [*Confidential*]. Opera has previously told the EU General Court that "*a good number of its users come from pre-installation agreements concluded with OEMs (Samsung, Huawei, OPPO and Tecno) so far as concerns Google Android devices.*"[40]

B. Chrome's Placement on Certain Android Devices Does Not Give Rise to an AEC

22. WP5 finds that browsers placed on the home screen are likely to be more visually salient, "*influencing the users' likelihood of using the browser app.*"[41] The placement on the default home screen helps "*focus user attention and minimise user effort to*

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38 WP5 suggests at ¶A.63(b) that Google's Android agreements may impact OEMs' incentives to "*develop a competitive first-party browser app on the same device on which Chrome is pre-installed.*" However, evidence shows intense competition from the OEM browsers. OEMs can easily develop an Android browser using the open-source Chromium and promote it on their own devices. Google's agreements may incentivise OEMs to promote their own browsers over Chrome. [*Confidential*].

39 [*Confidential*].

40 Judgment of 14 September 2022, *Google v Commission*, T-604/18, EU:T:2022:541, ¶440.

41 WP5, ¶4.18.

access applications they use frequently, requiring less navigation and creating inertia through the UI."[42] In addition, WP5 states that users may believe that a prominently placed browser is endorsed and recommended by the OEM and/or be influenced by the status-quo effect and defer to the browser "*without ever taking an active decision.*"[43]

23. WP5 therefore suggests that Chrome's placement on the device home screen "*means that users may be less aware of alternative browsers and less likely to make active choices between browsers.*"[44]

24. Placement of Chrome on Android devices cannot give rise to an AEC, though, for the following reasons:

- First, the CMA's research shows that users routinely rearrange their home screens, irrespective of which browser is prominently placed out-of-the-box. Insofar as users maintain Chrome as their prominently placed browser, this is more likely to be attributable to their preference for Chrome.

- Second, Chrome is placed directly on the home screen on less than half of Android devices.

- Third, Google's agreements under which Chrome is placed in the "hotseat" are contestable by browser rivals.

25. We expand on these points in more detail below.

26. **WP5 has not established that placement of Chrome contributes to consumer inertia and lack of awareness of and engagement with browser choice**. WP5 suggests that prominent placement of Chrome on an Android user's home screen contributes to reduced user awareness, engagement, and choice of browsers.[45] But the CMA's own research suggests that UK consumers are confident in their ability to rearrange their home screens, and do so in respect of browsers specifically. In these circumstances, insofar as users maintain Chrome as their prominently placed browser, this is more likely to be attributable to their preference for Chrome. Two points bear emphasis:

- ***First, the literature WP5 relies on is irrelevant to the placement of apps on mobile device home screens***. In support of its assertion that out-of-the-box placement of an app on a device home screen can influence

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42 WP5, ¶4.18.

43 WP5, ¶2.14.

44 WP5, ¶5.5(a).

45 WP5, ¶¶5.4(a) and 5.7.

usage, WP5 relies on studies relating to ranking of online search engine results.[46] Out-of-the-box placement of an app on a home screen is, however, not equivalent to viewing search results. A search engine's primary purpose is to sort results by relevance in response to the user's query. It is inherent to this purpose that the user is expected to click the most prominent results. In the case of app placement on a home screen, the user comes back to the same options frequently, and is best served by manually placing frequently-used and preferred apps more prominently. The evidence cited by WP5 therefore does not establish the proposition that out-of-the-box placement of an app on a device home screen influences usage.

- ***Second, the CMA's consumer research shows that users routinely re-arrange their home screens***. The CMA's research finds that just under half of Android users actively set the placement of their preferred browser.[47] This demonstrates that users whose preferred browser is not in a prominent position can and do rearrange the placement to suit their needs. Tellingly, of those users who reported downloading their main browser, 8 in 10 recalled actively repositioning its placement.[48] This demonstrates that a browser's out-of-the-box placement does not drive its usage. If a user prefers a different browser, they will download an alternative, and rearrange their home screen to suit their needs.

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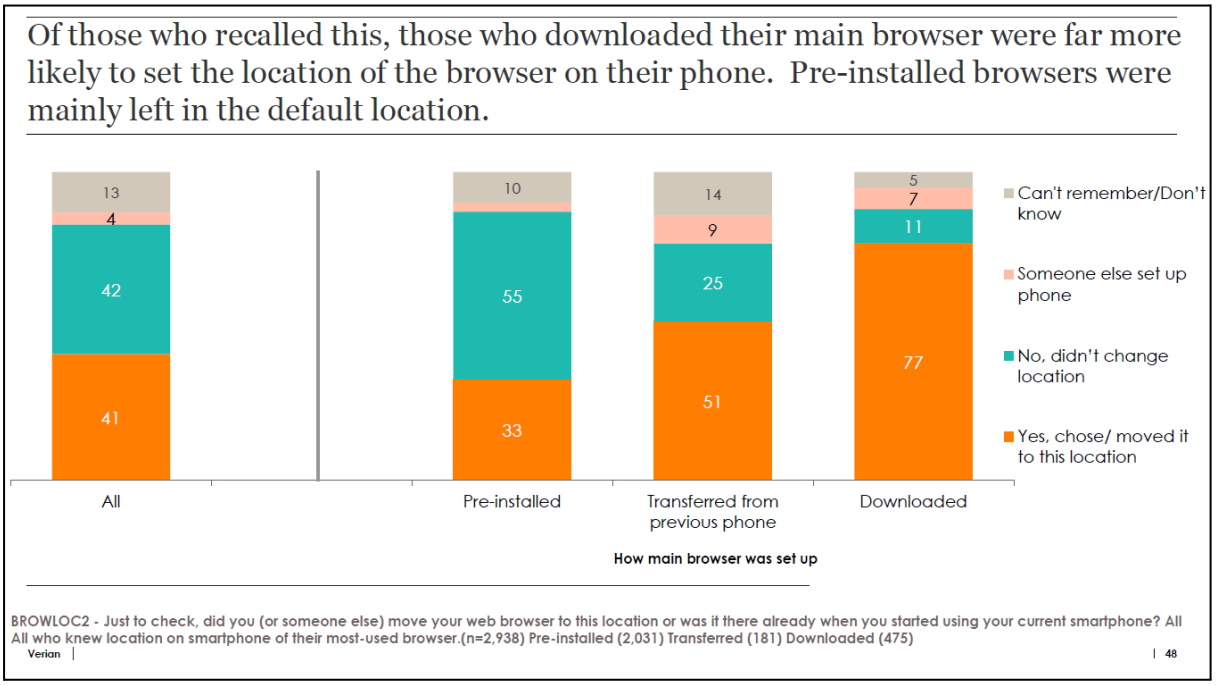
[46] WP5, ¶2.12 ("*Visual salience can be an important aspect of UI design, especially for user engagement. For example, positional bias in search results can influence how many clicks a result receives, even if the result is less relevant, with users primarily focussing their attention on the top three search results in a list. A 2022 report on Amazon consumer behaviour indicated that more than 30% of users frequently buy the first product listed in a search*").

[47] WP5, ¶4.30.

[48] Verian Quantitative Consumer Research, slide 48.

Verian Research Supports That 8 in 10 Users Who Download a Browser Rearrange its Placement



Source: Verian Quantitative Consumer Research, slide 48

27. **Chrome is placed directly on the home screen of less than half of Android devices**. WP5 finds that "*[o]n Android devices where Chrome is pre-installed, Chrome is always placed on the home screen.*"[49] This is factually incorrect. Chrome is preinstalled and placed directly on the home screen on less than half of Android devices in the UK. On Samsung's devices—which represent approximately 60% of UK Android device shipments[50]—Chrome is preinstalled and placed *in a folder* on the home screen containing other Google apps. Samsung Internet is placed in a more prominent position (the "Application Dock" or "hotseat") and, as explained further below, set as default. WP5 makes no attempt to determine whether Chrome's placement in a less prominent position—in a folder on the home screen, rather than on the home screen itself—impacts user behaviour.

49 WP5, ¶4.25.

50 [*Confidential*]. 60% is a lower-bound estimate for Android devices on which Chrome is preinstalled but not placed on the home screen. This is because other OEMs including Xiaomi, Oppo, and Vivo also preinstall their own first-party browsers, but Google has limited visibility into their out-of-the-box placement configuration. It is possible that these OEMs place their first-party browsers more prominently than Chrome, as Samsung does.

Samsung Internet is Placed in the 'Hotseat' on approximately 60% of UK Android Device Shipments

28. **Google's agreements under which Chrome is placed in the "hotseat" are contestable by rival browsers**. Google's RSAs operate on a device-by-device basis [*Confidential*]. WP5 does not give sufficient weight to this point in its analysis, which undermines the conclusion that matching Google's agreements would not be "*economically viable*" for rival browsers.[51]

29. Even on devices that are configured to earn higher-tier payments, ample placement opportunities remain for rival browsers to be preinstalled alongside Chrome and placed where users can easily reach them:[52] [*Confidential*].

C. Chrome's Default Status on Certain Android Devices Does Not Give Rise to an AEC

30. WP5 states that defaults are "*one of the most effective practices to influence user behaviour.*"[53] Citing purported influences such as status quo bias, the endowment effect, and the perception that the default is endorsed or recommended by the OEM, WP5 observes "*behavioural barriers that reduce consumers' choices in the face of defaults.*"[54] WP5 concludes that where Chrome is set as default it makes it more likely that it will remain as the default browser across access points (*e.g.*,

51 WP5, ¶4.7.

52 [*Confidential*].

53 WP5, ¶2.17.

54 WP5, ¶2.18.

Gmail and the Google Search app on Android), which in turn protects Chrome's usage and overall browser traffic.[55]

31. WP5, however, fails to consider the following critical points:

- First, the evidence WP5 relies on does not establish that Chrome's default status on Android devices contributes to consumer inertia and lack of awareness of and engagement with browser choice.
- Second, Chrome is set as the initial default on only a minority of UK Android devices.
- Third, Google's agreements under which Chrome is set as default are contestable.

32. We expand on these points in more detail below.

33. **WP5 has not established that Chrome's default status on Android devices contributes to consumer inertia and lack of awareness of and engagement with browser choice**. WP5 suggests that Chrome's status as default browser contributes to reduced user awareness, engagement, and choice.[56] However, the evidence that WP5 relies on does not support this conclusion. For the following reasons, it in fact establishes the opposite: users are confident in their ability to switch default browsers, and do so when they prefer to use a different browser:

- ***First, evidence confirms that Android users are confident in their ability to switch defaults***. With multiple easy routes to switch default browsers, it is unsurprising that Android users are confident in their ability to do so. The CMA's research found that 8 in 10 users could change their default browsers if they wanted to and approximately 90% of those who *had* changed their default browser found the process easy.[57] This confirms the findings of the CMA's earlier research conducted during MEMS.[58] In addition, the ACCC's Consumer Study found that "*substantial proportions [of respondents] stated they knew how to change their default browsers*" and 84% of those who had changed default in the 2 years before the survey found switching "*easy/very easy*."[59]

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55 WP5, ¶5.5(b).

56 WP5, ¶¶5.4(c), 5.5(b), and 5.7.

57 WP5, ¶4.45 and 2.45.

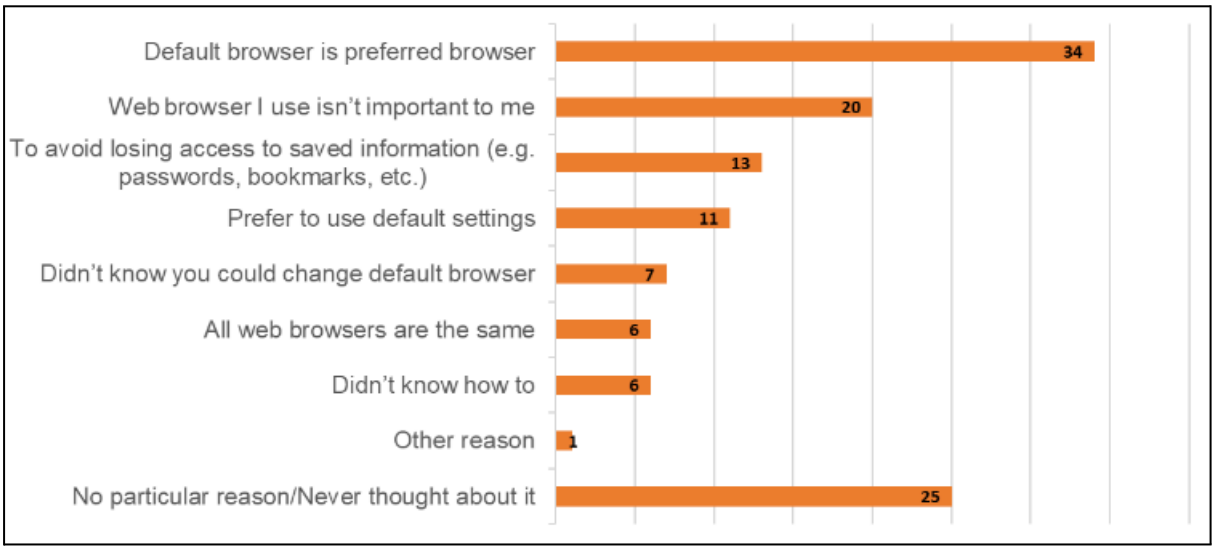
58 *See* Accent, Consumer purchasing behaviour in the UK smartphone market for the CMA's Mobile Ecosystems Market Study, Final Report (June 2022) (the "**Accent Survey**"). According to the Accent Survey, over 80% of UK Android users are confident with "*changing settings on smartphones (e.g. changing default settings)*."

59 ACCC Consumer Study, p. 17.

- ***Second, users whose preferred browser matches the default will be unlikely to switch defaults***. WP5 indicates that the rate of default switching on Android is low (albeit also noting that it is "*significantly higher than the corresponding figure for iOS users*").[60] However, WP5 fails to account for the fact that users' 80% confidence in their ability to switch defaults if they want to demonstrates that the most likely reason for them *not* switching is their preference for the default browser. This is confirmed by the following evidence:

    - The CMA's research found that of those users who *had* changed their default browser the most popular reason for doing so aligned with users expressing a preference for a non-default browser.[61] Of the users who had *not* changed their default browser, the most popular reason was that their default browser was their preferred browser.[62] Relatively few users cited a lack of knowledge.

Among Users Who Have Not Changed Default Browser, the Most Popular Reason Was That Their Preferred Their Default



Source: Verian Research (see WP5, ¶2.40)

    - According to the CMA's research, 63% of Chrome users on Android devices expressed a preference for Chrome, with only 5% saying

60 WP5, ¶4.56 ("*As with the iOS users, only a minority of Android users stated that they had actually changed their default browser on their current phone (27%)*").

61 WP5, ¶2.45. Reasons selected by more than 10% of users included a preference for a specific browser, wanting to use the same browser used on another device, controlling how the user accesses the internet, and not liking the default browser.

62 WP5, Figure 2.4; ¶4.58.

they used it because they did not know there were other options.[63] 72% of Pixel users in the survey said they did not change default because the default was their preferred browser.[64]

- As the CMA recognised in its MEMS Final Report, over half of Android devices in the UK in 2021 came with a non-Chrome browser (Samsung Internet) set as default.[65] Despite Samsung Internet being set as default on all Samsung Android devices, Chrome has the highest usage share on Samsung devices, showing that users exercise an active choice to use it rather than Samsung Internet.

- The ACCC Consumer Study also found that "*[w]hile Chrome was clearly most likely to be the main browser used on a computer [...] and the most likely to be the main browser on a smartphone [...], it was less likely than the other main browsers to have been pre-installed*."[66] In other words, "*many consumers take proactive measures to use Chrome (i.e. they download and install it onto their device)*."[67]

- Chrome had a share on Windows of 69% in the UK in Q1 2024, despite Edge being the exclusively preinstalled and default browser.[68] This shows that users can and do exercise the option to change their default browser when they have a preference to do so.

34. **Chrome is set as the initial default on only a minority of UK Android devices**. WP5 incorrectly states that Chrome is "*often ... pre-set as a default on the device*"[69] and "*usually set as the default browser.*"[70] In fact, Chrome is set as the initial default browser on less than half of all UK Android devices. On approximately 60% of UK Android devices, Samsung Internet is the initial default browser. It is implausible that Chrome's default status on approximately 40% of Android devices contributes to a lack of user engagement in the UK mobile browser market that WP5 alleges—even on WP1's unduly narrow market definition of Android mobile browsers. It is similarly

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63 Verian Group UK (2024) Mobile Browsers Quantitative Research, Slide 51.

64 Verian Group UK (2024) Mobile Browsers Quantitative Research, Data tables 'WHYNOCHANGE'.

65 CMA, Mobile Ecosystems Market Study Final Report (10 June 2022), ¶5.95.

66 ACCC Consumer Study, p.13.

67 Ibid.

68 CloudFlare.

69 WP5, ¶5.4(c).

70 WP5, ¶5.4(d).

implausible that Chrome's default status results in its usage share of (according to WP1[71]) 77% on UK Android devices.

35. **Google's agreements under which Chrome is set as default reflect a competitive process**. As explained above at ¶20, Google's agreements under which Chrome is set as default and placed in the "hotseat" are optional. It is OEMs' decision as to whether to set Chrome as the default browser. Google's agreements are contestable as any requirements to set Chrome as default and place it in the "hotseat" apply only to higher tiers of OEMs' agreements. In other words, to obtain default status rivals only need to offset the payments linked to the higher tiers in Google's RSAs, not the entire payments OEMs earn from them. There is therefore no basis for rivals' statement that "*agreements that allow Google to achieve default status are not financially viable for them*."[72]

D. The Default Switching Journey on Android Does Not Give Rise to an AEC

36. WP5 explains that the number of steps and "*complexity or friction*" involved in the user journey for changing default browser may "*deter users from doing so, increasing the usage of the browser that has been pre-installed and set as the initial default on the device.*"[73] It suggests that this makes it difficult for users to switch their default browser.[74]

37. WP5's concern is misconceived with respect to Android. There is no possibility of the default switching journey on Android giving rise to an AEC, for three main reasons:

- First, the effectiveness of a user journey to switch defaults cannot be judged effectively solely on the number of steps involved.
- Second, the user journey for switching default browsers on Android is intuitive and well-signposted, negating any possibility that the user journey deters users from switching when they might otherwise do so. In addition, WP5 should take into account browsers' ability to prompt users to switch defaults as part of its assessment of the ease of switching default browsers on Android.
- Third, evidence confirms that users are confident in their ability to switch defaults, and do so when they prefer a different browser (as explained in **Section I.C** above).

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71 WP1, Table 4.1.

72 WP5, ¶4.41.

73 WP5, ¶¶2.19-2.20.

74 WP5, ¶5.5(c).

38. We expand on these points below.

39. **The effectiveness of a user journey to switch defaults cannot be judged effectively solely on the number of steps involved**. WP5's only criticism of the default switching journey on Android is that "*users are required to take [a] number of steps to change their system default browser under a specific setting in the device settings menu, making it a difficult task, often hard to complete.*"[75] This fails, however, to recognise that a user will axiomatically have to take some steps if they want to switch their default browser. The number of steps the user has to take is an arbitrary metric and not necessarily determinative of their ability or tendency to carry out this action in practice. Instead, a holistic assessment of the user journey is required. This analysis is absent from WP5.

40. **The user journey for switching default browsers on Android is intuitive and well-signposted.** The default switching journey on Android is intuitive and well-signposted, as several browser vendors have confirmed to the CMA. In particular:[76]

- Android's settings menu includes subtitles that clearly show—from the top-level settings page—where default settings can be changed.
- Default settings across multiple app categories are housed in the same settings menu, allowing users to build a clear mental model for how to switch defaults. Housing default settings in different places (*e.g.*, by making some more prominent than others) may interfere with users' ability to build a mental model for changing defaults generally. And housing too many settings in the main settings menu may overwhelm users with prominent choices or result in users inadvertently switching certain settings.
- The setting for switching defaults does not move depending on which app is set as default.

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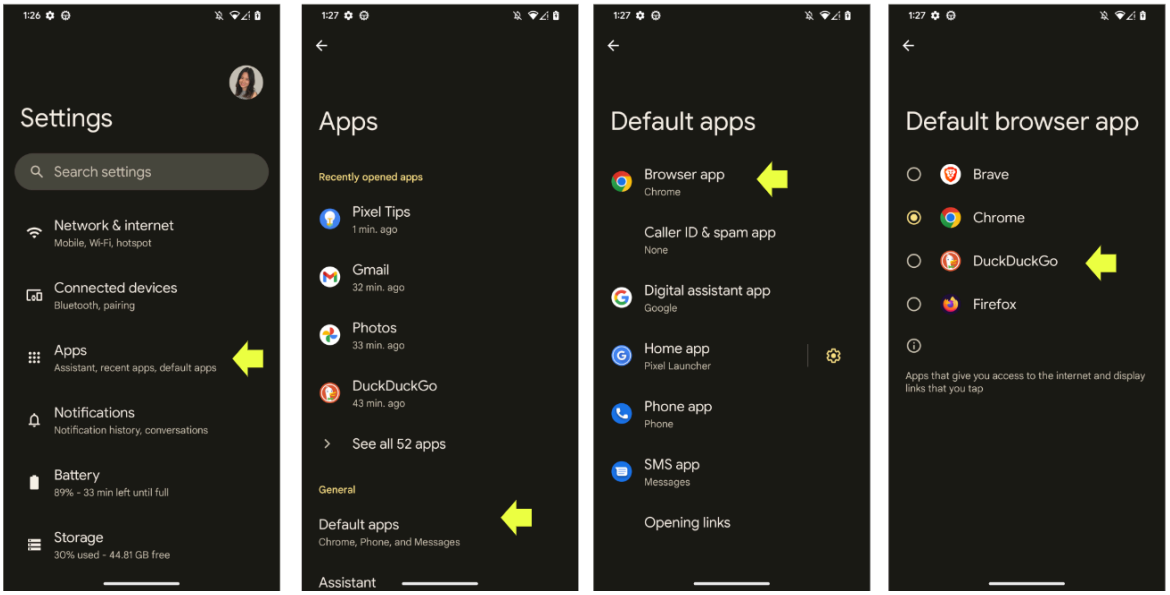
[75] WP5, ¶4.48.

[76] WP5, ¶4.54 ("*Some browser vendors have cited the Android user journey as simpler, in contrast to the complexity of Apple's implementation on iOS devices*").

Intuitive and Well-Signposted Default Switching Journey on Android



41. **The default switching journey on Android comprises both the settings menu, default prompts, and searching**. On Android, browsers can access an API that enables them to prompt users to switch defaults in two easy steps that do not require the user to navigate to the settings menu. These prompts assist browsers in encouraging users to set them as default, as explained below in **Section I.F**. In addition, WP5 ignores an alternative means of users reaching the browser default settings menu, which involves searching "default" from the main settings menu. WP5 should not therefore have considered the settings menu in isolation when it analyses the ease of switching browser defaults on Android. It should have taken a holistic approach that considered how the intuitive, well-signposted, and searchable settings menu, and API-based prompts shown by downloaded browsers, make it easy for users to switch.

42. **Evidence confirms that Android users are confident in their ability to switch defaults**. With multiple easy routes to switch default browsers, it is unsurprising that Android users are confident in their ability to do so. As explained above in **Section I.C**, the most likely explanation for users not switching defaults when Chrome is their default browser out-of-the-box is their preference for having Chrome set as their default browser.

43. In light of the above, there is no basis for WP5's conclusion that the default switching journey on Android may give rise to an AEC.

E. Android's Uninstallation Function Does Not Give Rise to an AEC

44. WP5 finds that restrictions on a user's ability to uninstall an app could be viewed as a "*forced action*" which "*limit[s] users' control and ability to exercise effective*

choice."[77] In the context of browsers, these restrictions may "*deter users from installing additional browsers*"[78] and "*create an implicit endorsement and self-preference [for] Safari on iOS and Chrome on Android in comparison to other browsers*."[79]

45. WP5 wrongly assumes that Chrome cannot be uninstalled from Android devices. Chrome can be easily uninstalled from Android devices via disabling, which acts as an important safeguard for Android devices and has the same effect as full deletion from the users' perspective.

46. **Disabling is a form of uninstallation on Android**. Android apps either can be uninstalled from Android devices via the "disabling" function or fully deleted. Disabling applies to apps that are preloaded in the read-only "system" partition of the device; deletion applies to apps installed in the "user" partition. [*Confidential*].

47. **Disabling has the same effect as deletion and uninstalls Chrome from the users' perspective**. Uninstalling Chrome via disabling takes three simple steps and has the same effect from the user's perspective as if it has been fully deleted from the device. In these circumstances, WP5's suggestion that "*[t]he inability to uninstall Chrome may lead to the 'endowment' effect*"[80] lacks evidential basis. In particular:

- Disabling results in Chrome's icon disappearing from the home screen and the app no longer being visible to the user. In addition, Chrome stops running in the background, collecting any data, or updating automatically (if automatic updates are switched on). It also takes up less memory on the device than the fully installed and enabled Chrome.

- Disabled apps cannot reinstall or reactivate themselves. To reinstall Chrome, a user can follow the same journey the user would have to go through to download and install any app for the first time (via the Play Store).[81] The user journeys for re-enabling apps in the system partition and re-downloading apps in the user partition are illustrated in **Annex 1**.

48. **Disabling acts as an important safeguard to Android devices**. Preventing full deletion of system partition apps such as Chrome serves two important purposes that safeguard the integrity of Android devices:

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77 WP5, ¶2.24.

78 WP5, ¶2.25.

79 WP5, ¶5.5(e).

80 WP5, ¶4.73.

81 The only difference is that the button to reinstall says 'Enable' when reinstalling a disabled system partition app, as opposed to 'Install' for a user partition app.

- First, it ensures that a device can always be returned to a known, functioning state through an action known as a "factory reset" (*e.g.*, for reselling the phone, returning it to a safe state, or protecting it from malicious apps or attacks). Preventing deletion of software in the system partition enables users to perform such a reset while retaining a functional phone. If the reset were to remove all software, including software in the system partition, the phone would no longer be usable. This maintains the device's out-of-the-box state which, for example, makes the device re-sellable.

- Second, the system partition is hermetically sealed from the rest of the device as an anti-tampering mechanism for the device. If it were possible for users to modify the system partition by deleting apps in that partition, it would also be possible for users (or apps downloaded by users) to modify the system partition in other ways, such as granting untrustworthy apps dangerous permissions. Such an ability would greatly reduce the overall security of the device.

F. Google's Marketing Prompts and Promotions Do Not Give Rise to an AEC

49. While acknowledging that prompts can minimise user effort by offering an easier route for switching browsers, WP5 observes that prompts sometimes require "*forced action*" and can "*increase the burden on users and reverse a decision a user has made previously.*"[82] It suggests that prompts may adversely impact the users' browsing experience and "*lead them to accidentally making less effective choices.*"[83]

50. Applying these concerns to Chrome on Android, WP5 finds that Google's prompts to switch default settings "*have the effect of nudging users when they have set an alternative browser to return to Chrome across a number of different access points.*"[84]

51. WP5's suggestion with respect to prompts shown by Chrome on Android and iOS are unfounded for the following reasons:

- First, WP5's characterisation of prompts and promotions as potentially leading to less effective user choice is at odds with: (i) the Working Papers' overall suggestion that users are insufficiently aware of their option to switch between different browsers; and (ii) findings in the CMA's consumer research that most users find default switching prompts useful.[85]

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82 WP5, ¶2.23.

83 WP5, ¶2.23.

84 WP5, ¶5.5(d).

85 WP5, ¶4.70.

- Second, on Android, Chrome prompts users to consider switching their default to Chrome using tools that are available to any Android browser.

- Third, on iOS, Chrome's promotions are aimed at users that have not set Chrome as default, to educate them about their ability to do so.

- Fourth, Chrome's prompts and promotions are designed to be non-intrusive and to facilitate, not frustrate, user choice.

52. We expand on these points in more detail below.

53. **Prompts and promotions enhance user engagement**. WP5 suggests that prompts can undermine user choice. This is at odds with its earlier suggestion that "*[p]rompts can minimise user effort because they offer an easier route for switching browsers.*"[86] Evidence supports that browsers find prompts and promotions helpful in encouraging users to switch, and users find them helpful when considering whether to switch browsers:

    - WP5 finds that third-party browsers view prompts as "*helpful for getting users to choose their browser as the default*."[87] Accordingly, it recognises that such prompts "*offer an easier route for switching browsers*."[88]

    - The CMA's research found that 7 in 10 users found prompts useful.[89] Indeed, 65% of Android users who had switched default had seen a prompt before doing so.

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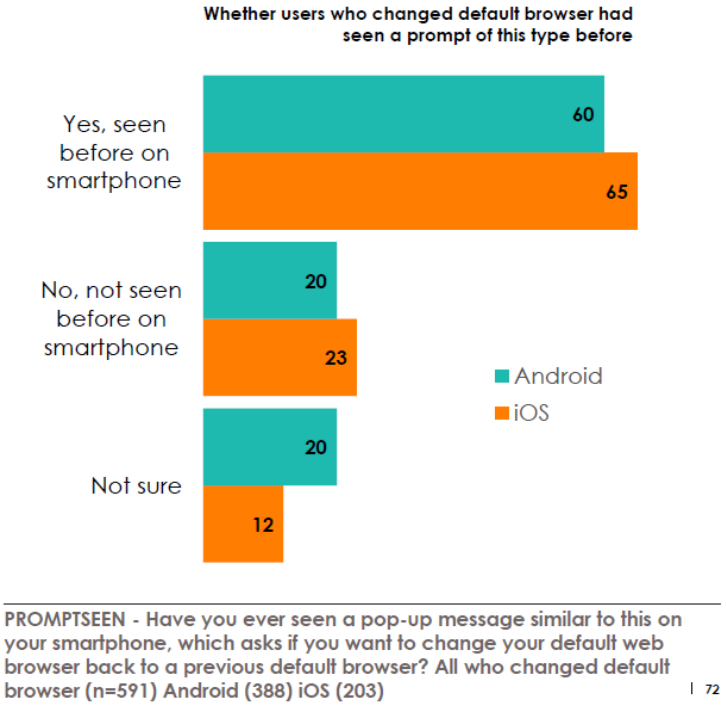
86 WP5, ¶2.23.

87 WP5, ¶4.66.

88 WP5, ¶2.23.

89 WP5, ¶4.70.

Most Android Users Who Switch Defaults on Android See a Prompt Before Doing So



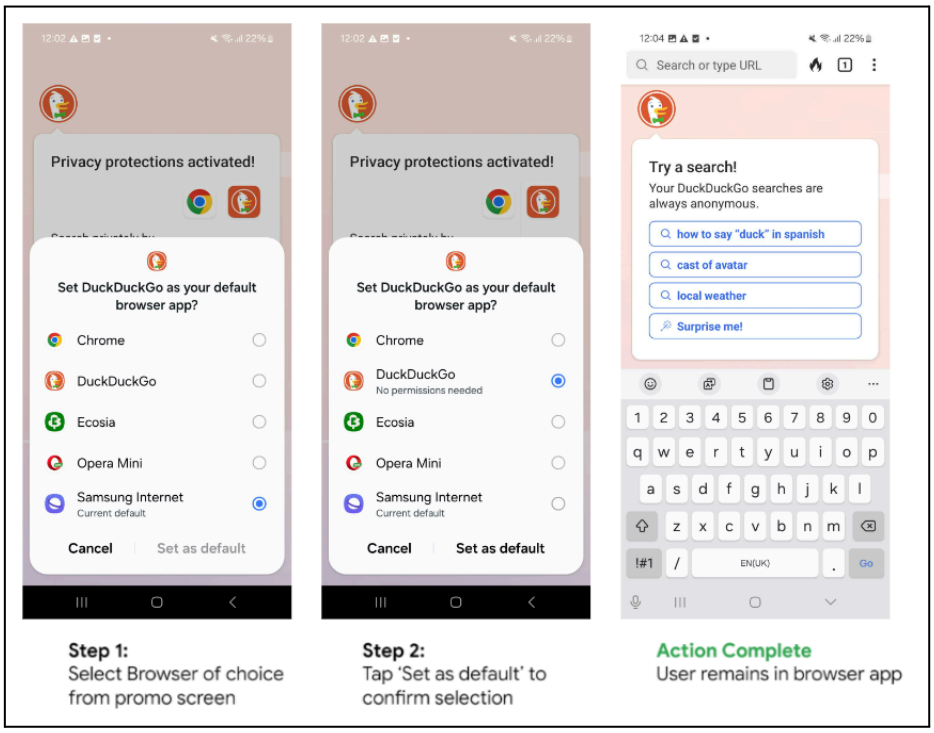
Source: Verian Quantitative Consumer Research, slide 72

54. **Chrome's prompts and marketing promotions on Android are available to all browsers**. On Android, Chrome uses prompts/marketing promotions that are open to other browsers, including the Android default switching API and standard email campaigns. In particular:

- On Android, when Chrome is not set as default, we show prompts in the Chrome app using an Android API that encourages the user to set Chrome as default. This API (for which there is no equivalent on iOS) is available to all browsers on Android. It enables them to determine if they are the user's current default browser, and display the prompt accordingly. Mozilla told the CMA that Firefox saw an increase in user engagement when it started showing default prompts in 2021.[90]

[90] WP5, ¶4.66.

Android Allows Browsers to Prompt Users to Easily Switch Defaults - Chrome Does Not Have Unique Access to This API



- The email marketing promotion mentioned in WP5 is a standard marketing tool that is open to all competitors. It promotes Chrome among an array of other apps. It is shown following device set up when Chrome is already preinstalled and (on some devices) set as default. In these circumstances, it cannot plausibly give rise to a restriction of competition. It simply educates the user on what they can use Chrome for.

55. **Chrome's prompts and promotions on iOS are procompetitive**. Chrome's marketing promotions that encourage users to switch to Chrome are predominantly shown on iOS, where it was impossible to switch browser defaults from Safari until 2020. Accordingly, unlike on Android, many iOS users may still lack awareness of their ability to switch browser defaults.[91] [*Confidential*].[92] This is consistent with feedback provided by browser developers that prompts are helpful to "*get[] users to set their browser as default and increase engagement*."[93]

56. **Our prompts are designed to be non-intrusive and to not frustrate user choice**. We design our prompts so that they are non-intrusive to the user journey and do not frustrate users' choices. For example: [*Confidential*].

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91 [*Confidential*].

92 [*Confidential*].

93 WP5, ¶3.63.

57. **Our prompts create rivalry-enhancing efficiencies**. Google's marketing prompts create rivalry-enhancing efficiencies (consistent with the CMA's research):

- For users that were unaware they can change their default, which WP5 raises a concern with, prompts increased user awareness. This applies both to Chrome (*e.g.*, if the user was not aware of Chrome) and rival browsers (*e.g.*, if the user becomes aware they can change their default and chooses a non-Chrome browser).

- For users that were aware they can change their default, Google's prompts are designed to be unobtrusive and proportionate so as to not lead to user frustration.

- On iOS, the benefits are likely greater because:

    - Before 2020 iOS users were not able to change the default browser, so the prompts would have brought a greater awareness of this fact to iOS users.

    - Safari is the most popular browser on iOS devices, increasing user awareness of Chrome enhances the competitive constraint exerted on Safari, increasing overall browser competition on iOS.

    - Third-party browsers on iOS have to compete harder to gain users on iOS compared to other platforms, given their more limited ability to differentiate themselves due to Apple's WebKit restriction.

58. If, despite the evidence provided above, the CMA is minded to find that Google's prompts do give rise to an AEC, this would be entirely offset by RCBs negating any need for the CMA to impose a remedy (for the reasons explained above on how users benefit from prompts).

II. Google's Android Agreements Create Relevant Customer Benefits

59. For the reasons explained above in **Section I**, Google's choice architecture practices do not give rise to an AEC on Android. If the CMA is minded to disagree with this assessment, any AEC that Google's Android Agreements give rise to would nevertheless be entirely offset by RCBs negating any need for the CMA to impose a remedy. The Android agreements create RCBs—for both OEMs and consumers—in the following ways:

- Lower device prices and/or higher quality devices;

- High-quality out-of-the-box experiences where users' preferred apps are preinstalled and set as default; and

- Safeguarding Android devices' resale value and device integrity, insofar as they require Chrome to be preinstalled on devices' "system," rather than "user," partition.

60. In more detail:

61. **The Android agreements create RCBs in the form of lower device prices and/or higher quality devices**. Google's Android agreements create a flow of money to Android OEMs that choose to enter into them. In the UK, the Android agreements on average are worth [*Confidential*] per device. This represents [*Confidential*] of the average Android device price. This creates benefits for two types of customer:

- First, OEMs, which can use the additional money (in aggregate over [*Confidential*] per year) to invest in device quality and innovation.

- Second, end consumers, who benefit from this flow of money because it is passed on in the form of lower device prices and/or higher quality devices. The extent to which consumers benefit depends on the amount of monetary flow and the degree of pass on. The evidence indicates both are significant and therefore the Android agreements generate relevant consumer benefits:

    - Standard economic theory indicates that even a monopolist supplier facing linear demand will pass on 50% of a reduction in costs to consumers.[94]

    - More competitive markets are associated with higher degrees of pass-on, and competition between Android OEMs is fierce:

        1. Many Android OEMs have left the market or scaled back their device business after struggling to be profitable.[95] Despite this, there are at least 16 prominent Android OEMs operating today.

        2. OEMs report the competitiveness of the smartphone market in their financial statements. For example, Xiaomi's 2023 Annual Report describes competition in the industry as "*increasingly cut-throat*."[96] Samsung suggests that the smartphone industry shows "*high saturation*" and emphasises

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94 Microeconomic Theory, Mas-Colell, Andreu & Whinston, Michael D. & Green, Jerry R., 1995. OUP Catalogue, Oxford University Press.

95 Counterpoint Research, Nearly 500 Brands Exited Smartphone Market During 2017-2023 (20 September 2023).

96 Xiaomi, 2023 Annual Report, p. 96.

the importance of the "*competitiveness of the overall experience based on software for applications*."[97]

3. Apart from Samsung, the profitability of Android device sales is low.[98]

4. The CMA has previously concluded that Android users are particularly price-sensitive.[99]

- Moreover, given there is at least a degree of competitive interaction between Android and iOS devices, the effect of this will be to push down prices or drive up quality of iOS devices to the benefit of consumers.

62. **The Android agreements create RCBs in the form of high-quality out-of-the-box experiences where users' preferred apps are preinstalled and set as default**. Chrome is preinstalled on Android devices alongside a range of other high-quality apps, including Google's popular apps like Maps, Google Search, YouTube, and Gmail. This benefits OEMs and users in the following ways:

- For OEMs, it facilitates device sales. Several OEMs told the CMA that "*pre-loading the Google Search and Chrome apps [...] carries benefits for their users, for example, offering an improved and consistent experience to users*."[100] An OEM told the CMA that "*its users expect apps such as Google Search and Chrome to be available on Android devices*."[101]

- For users, preinstallation and defaults save users expending time and effort to reach their preferred apps. WP5 acknowledges that choice architecture practices "*can have benefits for users, by potentially minimising effort. Consumers do not have to make an active choice at device set up and instead have the option to keep out-of-the-box settings.*"[102] For the many users that prefer Chrome and would download it through if it were not

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97 Samsung, 2024 1Q Interim Business Report, p. 22.

98 The Verge, Why do profit-seeking companies keep making profitless Android phones?" (3 February 2016).

99 "*The findings presented above are consistent with survey evidence that suggests that price is particularly important for Android users. For example, 54% of all Android users mentioned 'overall price' as an important factor in their decision.*", CMA Mobile Ecosystems Final Report, 2021, ¶3.80.

100 WP5, ¶A.23.

101 WP5, ¶A.23.

102 WP5, ¶2.16; *see also* ¶2.8.

preinstalled, the Android agreements make Chrome simple to access, saving those users time and effort.[103]

63. **Android's uninstallation function creates RCBs**. As explained above, disabling acts as an important safeguard to Android devices and therefore constitutes a RCB:

- Because the initial state of an Android device, including the out-of-the-box experience, can be easily restored through a system reset, consumers can restore their device for their own benefit, and/or safely resell their device with the security that their personal information and data will not be transferred to the new owner.

- Prohibiting user access to the 'system' partition prevents malicious actors from tampering with the device, enhancing device security.

Conclusion

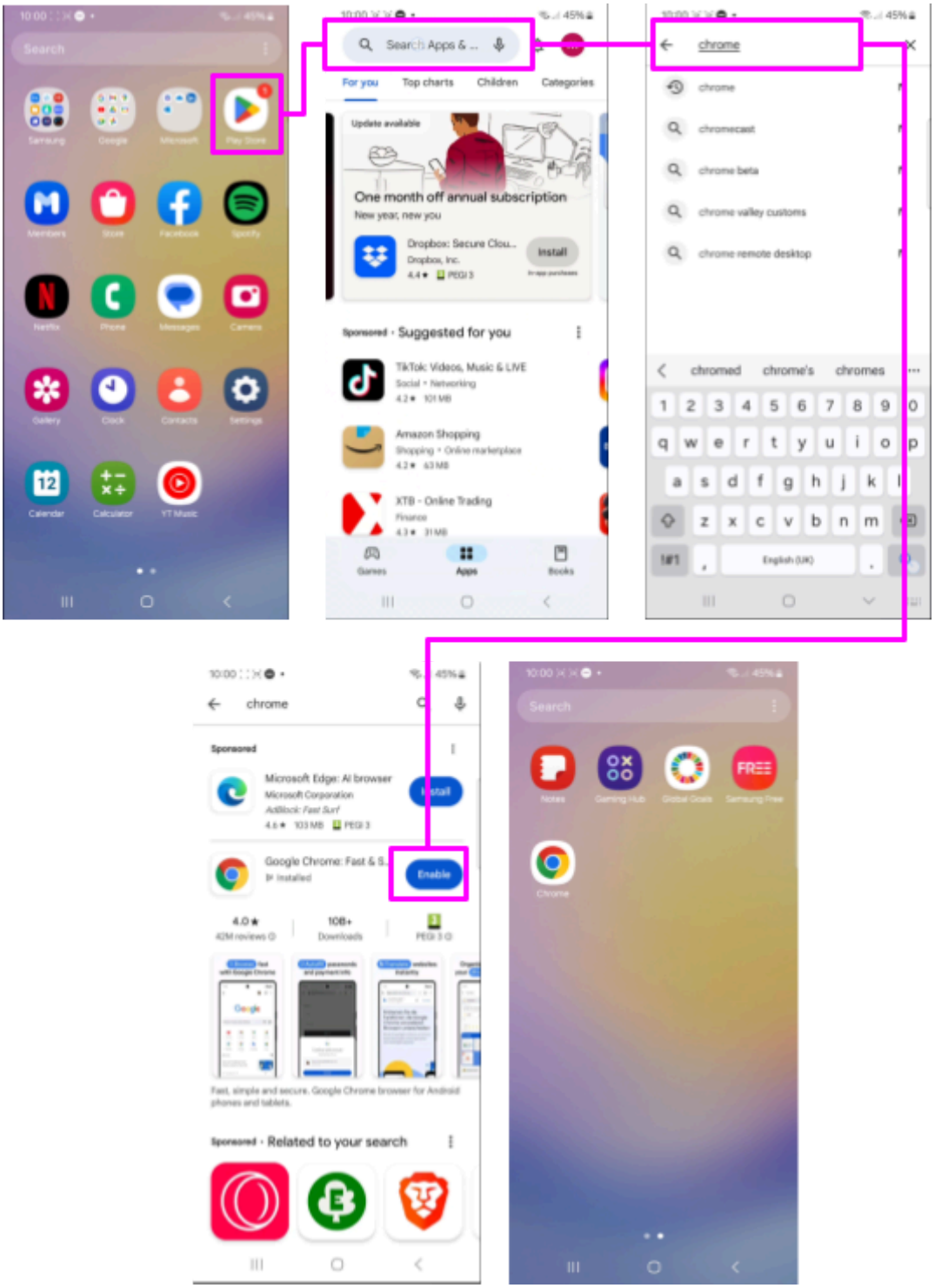
64. As this response has demonstrated, WP5 lacks evidence that Google's Android agreements negatively affect users' behaviour, reinforce any lack of awareness of or engagement with browser choice, or restrict competition. Instead, Google's practices are unambiguously procompetitive, supporting user choice and browser competition and a competitive Android ecosystem. The evidence WP5 relies on, instead of demonstrating a lack of consumer awareness and engagement, shows UK consumers with confidence in their ability to switch mobile browsers. And real-world evidence demonstrates that UK users make active choices and switch mobile browsers when they prefer to do so. In short, WP5 has not shown that Google's Android agreements or choice architecture practices result in an AEC on Android.

* * *

[103] The Verian survey found 63% of Android users for which Chrome was their most used browser indicated that they preferred it or chose to keep using it, and a further 22% said they had no other reason to use another browser. If Chrome is no longer preinstalled/prominently placed, this would impose a cost on these users who will then have to search and install Chrome.

Annex 1

User Journey: Re-Enabling System Partition App Through Play



User Journey: Re-Downloading User Partition App Through Play