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February 2025

**Strategic Market Status Investigations into Apple's and Google's Mobile Ecosystem**

**Response to CMA Invitation to Comment**

## Executive Summary

1. We welcome the opportunity to respond to the CMA's Invitation to Comment as part of its Strategic Market Status Investigations into Apple's and Google's mobile ecosystems (the "Invitation to Comment").

2. We support the SMS investigation into the designation of Apple and Google as having Strategic Market Status in relation to mobile operating systems. The CMA should articulate in greater detail what software is included in each mobile operating system. In particular, the CMA should clarify that Apple Pay and Apple Wallet are an inherent part of the mobile operating system digital activity, as well as Application Programming Interfaces (APIs) which are used by apps to interact with the hardware of the mobile device.

3. The CMA should focus on the following interventions to prevent Apple from leveraging its market power in mobile operating systems and ensure that it trades on fair and reasonable terms:

    - **Free, unlimited and unmediated access to NFC antenna and Secure Element for making and taking all payment types**. Apple restricts access to the NFC antenna and secure element[1] on iPhones so that they cannot be used by third party app developers to facilitate contactless mobile payments (CMPs), except for through its own CMP app, Apple Pay, or through its NFC & SE Platform, both of which involve significant payments to Apple and restrictions. Providing app developers with free, unlimited and unmediated[2] access to this hardware would: (i) increase innovation by enabling app developers to offer CMP digital wallets on iPhones; (ii) increase choice for consumers who would be able to switch to an alternative CMP digital wallet app on iPhones; (iii) increase the total addressable market for potential digital wallet providers by enabling them to offer digital wallets on both iOS and Android devices, thereby incentivising new digital wallet apps on both devices; and (iv) reduce switching costs for consumers switching between iOS and Android devices by enabling them to maintain their cross-platform payment apps.

    - **Third party apps should be treated on fully equivalent terms to Apple Pay and Google Pay so they can compete on a level playing field**. This includes enabling third party apps to make payments through tapping it on an NFC reader when locked, authentication mechanisms, loyalty card functionality and others.

[1] Contactless mobile payments (CMPs) are payments that consumers make by using apps installed on their mobile devices. When a consumer wants to use a CMP app to make a payment, the app communicates with a retailer's point-of-sale (POS) system. The CMP app communicates with the NFC antenna on the user's device to send the payment information to the retailer's POS terminal in the form of digital "tokens". Apple Pay works by storing these tokens on the Secure Element (SE) of the mobile device. Google Pay uses a technique called Host Card Emulation (HCE), which stores digital tokens in the cloud, only storing a small number of tokens at a time. A secure element is a physical chip installed within a device. CMP apps that use secure elements store sensitive data within the secure element and communicate with it to obtain the necessary token to make a payment.

[2] Unmediated in this context means that access occurs without the entering into of an additional contract with Apple. For example, Tap to Pay can be offered on Android devices without an additional contract with Google.

- **Apple should be prevented from continuing to use its substantial and entrenched market power to extract excessively high prices from card issuers and card acquirers.** While a conduct requirement enabling third parties to access the NFC antenna and Secure Element would be a beneficial upstream intervention, Apple may continue to use its substantial and entrenched market power to maintain unfair pricing terms at the service level (the wallet itself). Accordingly, it is important that the CMA imposes a conduct requirement for Apple to trade on fair and reasonable terms with all financial services counterparties for use of its Apple Wallet, including on pricing.

- **Card issuers and acquirers should be able to encourage users to take advantage of lower cost payment methods.** Apple prevents issuers and acquirers from promoting alternatives to the use of Apple Pay or Apple devices for making and taking payments. The CMA should intervene to enable issuers and acquirers to steer customers away from the use of Apple Pay or Apple devices (either through promotions of alternative payment methods, or surcharges on Apple Pay transactions).

- **Online payments should be unbundled from in-store payments, as Apple has leveraged its mobile operating system, through its digital wallet, to gain a privileged position for online payments**. The CMA should intervene in the contractual relations between Apple and card issuers, to enable card issuers to subscribe to Apple Pay for in-store payments on a standalone basis, as well as in combination with online payments. This would help prevent Apple from leveraging its position in mobile operating systems into online payments through its digital wallet restrictions.

4. The benefits of these interventions for consumers and businesses would be considerable. It is now important that the UK leads on facilitating innovation in UK financial services and does not fall behind the EU and the US, where antitrust authorities have sought to open up competition in mobile digital wallets. These conduct requirements would enable UK companies to grow and compete in new markets, supporting the UK's FinTech ecosystem.

5. While the focus of this response is on the activities of Apple as it restricts access to the NFC antenna, the proposed conduct requirements should also apply to Google to ensure a level playing field and to ensure that app developers are able to develop apps with equivalent functionality on both iOS and Android devices. Further information on the financial services activities covered in this response are set out in Annex 1.

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6. We address the following CMA questions:

    - Q1: Do you have any views on the scope of our investigations and descriptions of Apple's and Google's mobile ecosystem digital activities?
    - Q2: Do you have any submissions or evidence related to the avenues of investigation set out in paragraph 70-72? Are there other issues we should take into account, and if so why?
    - (We note the CMA omitted question 3)
    - Q4: Which potential interventions should the CMA focus on in mobile ecosystems? Please identify any concerns relating to Apple's or Google's mobile ecosystems, together with evidence of the scale and/or likelihood of the harms to your business or to consumers.
    - Q5: Are the potential interventions set out above likely to be effective, proportionate and/or have benefits for businesses and consumers?
    - Q6: What key lessons should the CMA draw from interventions being considered, imposed and/or implemented in relation to mobile ecosystems in other jurisdictions?

7. We also set out further information in three annexes:

    - Annex 1 - Background on the financial services activities covered in this response
    - Annex 2 – Apple continues to leverage its mobile operating system into digital wallets, despite its NFC & SE Platform which does not provide a level-playing field to competitors
    - Annex 3 – Third party apps to treated on fully equivalent terms to Apple Pay and Google Pay

**Q1: Do you have any views on the scope of our investigations and descriptions of Apple's and Google's mobile ecosystem digital activities?**

8. We support the scope of the Mobile Operating Systems SMS Investigations as set out in the Invitation to Comment. However, the CMA should explicitly include within the mobile operating system digital activity:

    a. **Apple Pay and Apple Wallet which are inherent parts of the mobile operating system** – The CMA should clarify that Apple Pay and Apple Wallet are an inherent part of the mobile operating system digital activity, as set out in more detail below. The CMA should explain further the ways that mobile operating systems act as intermediaries between hardware and software on the mobile device, impacting the way that consumers can use the hardware on the mobile device which they own, such as the NFC antenna and SE.

    b. **Application Programming Interfaces (APIs) and Software Development Kit (SDK) features that are needed to interact with hardware on mobile devices** – the mobile operating system should also include APIs as these may be the way that software can access certain hardware on the device. For example, Apple has very recently launched an API that would technically enable third party apps to access the NFC antenna and SE. Financial institutions can request access to iOS APIs to distribute an "NFC & SE Platform" based Payment Application.[3] While the supply of APIs is referred to in the context of Native App Distribution in the Apple Investigation Notice, it should also be included in 6(a) of the Investigation Notice as part of the mobile operating system.[4]

*Apple Pay and Apple Wallet are inherent parts of the mobile operating system*

9. Apple Wallet and Apple Pay should be considered as part of the mobile operating system digital activity, on the basis that Apple Wallet and Apple Pay have sufficient interlinkages in the way that they are used, accessed and supplied with mobile operating systems. Industry commentators have also agreed with this characterisation, stating "It's not an optional app, it's actually part of the operating system".[5]

10. Apple Wallet and Apple Pay are integrated into the iOS operating system, and Apple Wallet is pre-installed on the device, meaning that it is an inherent part of the operating system:

    - When a user sets up their iPhone, they are repeatedly notified if they have not loaded card details into Apple Wallet. This is considered as necessary to "Finish Setting Up Your iPhone", alongside Apple ID, Siri and Face ID.

    - "Wallet & Apple Pay" are grouped in the settings section of iOS, separate to Apple apps such as Notes, Calendar, and Mail, which appear in a different section, and third party apps, which appear in another section.

    - Just as the App Store is *the* app store for the iPhone, Wallet is *the* wallet for the iPhone. It is presented as *the* iPhone wallet, not the Apple Wallet.

11. Online Apple Pay payments through web browsers also form part of the same digital activity. Apple requires that if issuers enable their cards to be used for in-store payments using Apple Pay,

[3] Apple, "NFC & SE Platform for secure contactless transactions", available here.
[4] See paragraphs 6(b)(i) and 6(a) the Apple Investigation Notice
[5] Payments on Fire Podcast, Glenbrook, "Episode 250 – Fanning the Flames: Ten Years of Apple Pay"

they must be supported for online payments. From a technical perspective, Apple views online payments as using the same functionality for authorisation as in-store.[6] Apple Pay online payments made through web browsers therefore must also be included in the same digital activity alongside Apple Pay in-store payments.

12. In summary, the CMA's description of the digital activity of mobile operating systems should explicitly include Apple Pay and Apple Wallet which are inherent parts of the iOS operating system, as well as Google Pay in the case of Android.[7] This would make it easier for the CMA to impose conduct requirements so that Apple trades on fair and reasonable terms with third parties regarding Apple Pay and Apple Wallet. It would ensure that Apple does not leverage its substantial and entrenched market power in its digital wallet to other areas.

*APIs and SDKs that dictate how apps interact with hardware are also part of the mobile operating system*

13. App developers need to use APIs in order to use hardware on mobile devices. Currently access to these APIs is controlled via SDKs that are made available to developers joining Apple's Developer Program.

14. Apple's commitments to the European Commission in relation to the Apple Pay investigation offer a set of APIs to allow third-party digital wallet and payment service providers to access (and operate with) the NFC functionality on iOS devices.[8] Further, with its iOS 18.1 update, Apple will provide mediated, controlled access to the NFC and SE, for a fee through iOS APIs.

15. The CMA's description of the mobile operating system digital activity should therefore include the APIs and SDKs needed for third party apps to use hardware on mobile devices.

[6] Apple's Developer Guidance states that, when making online payments: "People make any necessary adjustments, authorize payment, and complete the purchase using securely stored credentials on iPhone, iPad, and Macs that include Touch ID or a Magic Keyboard with Touch ID... On other Macs, people confirm the purchase with their nearby iPhone or Apple Watch on which Apple Pay is set up".
[7] These should be included in the CMA's SMS decision note under section 15(3)(b) of the DMCC Act 2024
[8] Apple, "Case AT.40452 – Mobile Payments Proposal of Commitments to the European Commission", paragraphs 3.2, 3.3

**Q2: Do you have any submissions or evidence related to the avenues of investigation set out in paragraph 70-72? Are there other issues we should take into account, and if so why?**

16. It is essential that Apple and Google's mobile operating systems are designated as having substantial and entrenched market power, with strategic significance. We set out below how this has developed and how it requires urgent action. We explain how Apple has developed substantial and entrenched market power which will be difficult to challenge. We then explore how this will become further entrenched in the next 5 years through advances in AI assistants and the prevalence of connected devices.

*The development of a position of substantial and entrenched market power*

17. The Mobile Ecosystems Market Study set out why Apple has substantial and entrenched market power and a strategic position in relation to the supply of mobile operating systems.[9] In this section we illustrate how Apple has achieved these positions within financial services specifically, through the development of Apple Wallet and Apple Pay, which we believe can form part of the mobile operating systems digital activity.

18. **Apple prevented other app developers from launching an NFC payments app before Apple by not installing NFC antennas on devices until Apple Pay was launched:** Apple first installed an NFC antenna on the iPhone 6, in 2014, four years after Google and Samsung released the first Android device using NFC, the Nexus S, and Nokia released the Nokia C7.[10] The explanation for the delay in the implementation of NFC technology by a company perceived at the time to be "*the most innovative company in the world*,"[11] likely lies in the fact that Apple only released the technology when it was ready to launch its own proprietary digital wallet. Third party app developers did not have any opportunity to develop a CMP app for Apple devices before the launch of Apple Pay.

19. **Apple launched Apple Pay and Wallet as an inherent part of its mobile operating system and eliminated potential competitors by blocking access to the NFC antenna on iPhones:** Apple Pay and Wallet was not one of many apps that could be downloaded on the App Store, but was pre-installed on iPhones, part of the set-up process, and considered necessary in order for the user to "Finish Setting Up [Their] iPhone". If the user did not upload credit cards to the Wallet to enable Apple Pay, then they were notified that this still needed to be done, including using a red light to show this was not complete. Apple Pay and Wallet were therefore an inherent part of the mobile device and mobile operating systems.

20. **Apple made it impossible for rivals to offer equivalent CMP solutions, by blocking third party access to the NFC antenna, on security grounds**. Using NFC technology was essential to offer CMPs, as in the UK merchant terminals that already accepted contactless payments only needed a software update to be used to accept NFC-supported payments. QR codes or Bluetooth technology would have required different merchant acceptance solutions, which made it impossible for app developers to compete with Apple's NFC-powered solution. CMP transactions made using NFC technology are treated by the card scheme in the same way as physical card

[9] CMA, Mobile Ecosystems Final Report, Annex L, paragraphs 16 – 31 and 36 – 48.
[10] Business Today Magazine, "A guide to NFC-enabled smartphones", 1 February 2012. Available here.
[11] Engadget, "Apple named most innovative company in the world for 9th consecutive year", 27 September 2013. Available here.

transactions, with the same liability rules applying to retailers. This guaranteed Apple unparalleled merchant acceptance, which was essential for user adoption.

21. **Apple's reservation of NFC technology to itself meant that issuing banks had no choice but to sign up to Apple's 'take it or leave it' terms.** As a result, all major UK issuing banks agreed to pay commissions each time a customer used their card in Apple Pay. Issuers faced a lose-lose proposition: adopt Apple Pay and pay commissions for card payments, or risk losing customers to issuers who did adopt it. Issuers also had no choice but to agree to promote Apple Pay through a multi-million-pound marketing campaign, despite the high fees, and to promote Apple Pay to all new customers.

22. **Apple then leveraged its position as an unavoidable trading partner for in-store payments into the market for online payments,** by requiring that issuers who support Apple Pay for in-store mobile payments support online payments made through Apple Pay, despite even higher fees to issuers. Apple charges a surcharge for remote payments, even though it does not bear any of the financial risk associated with such payments. Apple requires merchants who adopt Apple Pay to present Apple Pay as the primary displayed payment option.[12]

23. **Now that it has an entrenched position in digital wallets, Apple is poised to leverage its mobile operating system to promote a range of other services.** In September 2014, when Apple CEO Tim Cook launched Apple Pay, he stated "Our vision is to replace this [wallet] and we are going to start with payments."[13] Apple is experimenting with a range of other financial services, including credit cards, payments by instalments and rewards, Apple Cash and Savings. Apple also prevents third party app developers from accessing the NFC antenna on iOS devices to receive payments, other than through its own proprietary Tap to Pay functionality for which it charges fees.[14]

*Apple's market position in digital wallets is now fully entrenched and will be difficult to challenge*

24. By reserving to itself access to NFC functionality and the secure element on its devices over a period of 10 years, Apple has developed a deeply embedded incumbent market position. Even if it is soon required to provide free unmediated access and full inter-operability, on robust non-discriminatory grounds, Apple will now benefit from consumer inertia and network effects, which will insulate it from competitive threats from rival digital wallets. In particular:

    - The launch of Apple Pay and Wallet was accompanied by millions of pounds in advertising spend (by card issuers, at the behest of Apple) to generate consumer awareness. It is now widely marketed at POS checkout and online. Any rival wallet would likely require even greater spend to pull customers away from their Apple Wallets.

    - Apple Pay and Wallet have been deeply embedded in the iPhone operating system over the past decade. This starts from when a user first sets up their phone, being continually

[12] See Apple's Acceptable Use Guidelines for Apple Pay on the Web, the Apple Pay Marketing Guidelines and Human Interface Guidelines."

[13] Apple Pay - Case - Faculty & Research - Harvard Business School (hbs.edu)

[14] In 2023, Apple launched Tap to Pay in the UK. This technology has been available for Android devices for some time. In 2011, PayPal enabled person-to-person transfers whereby users with an NFC-enabled device on Android could tap their phones to directly exchange money using the PayPal app. Mastercard offers Tap on Phone to enable small businesses to receive payments on any NFC-enabled Android device without the need for a terminal. However, Apple prevented the equivalent functionality on iPhones and took more than a decade to launch its own comparable tool.

notified to upload their cards to their Wallet, to the way online payments can be authorised using an iPhone. 10 years without competition mean that consumers inherently connect the act of making CMPs on iPhones with Apple Pay, acting as a barrier to entry.

- Consumers are not charged for Apple Pay usage. They have less of an impetus to switch away from their current service, and lower incentive to shop around for alternatives.
- Switching to a rival wallet (whether within the Apple ecosystem or across ecosystems to Android) will entail significant switching costs. The existing Apple Wallet contains bank card details which consumers would need to reupload and gain approval for when switching to a new digital wallet. Apple uses data it gains through Open Banking Account Information Services API calls to further bolster its position.
- Apple Wallet includes several services, including Digital ID, Rewards schemes and tickets, which will make it more difficult for pure payments wallets to compete. Apple also enhances its wallet through free data that it receives from banks through account information services under its Connected Cards proposition, despite the costs of banks to provide this information.
- For online card payments, Apple has been able to leverage its position in mobile operating system through the card issuer side of the market in its negotiations with merchants, such that Apple Pay is now a common online checkout option in the UK. Apple's agreements with merchants require it to be the most prominent option at Checkout, which creates a further barrier to entry for rival wallets who may wish to offer a single solution for in-person and online payments.

25. Apple's embedded position in payments markets means that conduct requirements will need to extend beyond the "infrastructure" layer – the opening up of access to NFC functionality on non-discriminatory terms. It will also be necessary to intervene to ensure that Apple trades on fair and reasonable terms with card issuers and acquirers at the "service layer" of the Apple Wallet. For example, an intervention to unbundle POS from online payments in the Apple Pay contract for issuers would likely enable issuers to negotiate better terms with Apple. We discuss this further in response to Question 4.

*AI assistants will increase and entrench Apple and Google's market power in mobile operating systems over the next 5 years, as set out in paragraph 71(b) of the Invitation to Comment*

26. **Both Apple and Google have launched AI assistants for their mobile operating systems**. iOS users will be able to ask questions to Siri and receive answers using Apple Intelligence. Alphabet has launched Gemini as its AI assistant on Android. Apple has launched its App Intents framework for developers to allow Siri to suggest the app's actions and to integrate into Apple Intelligence more deeply. Digital assistants such as Siri and Gemini will become more advanced and able to agentically power autonomous workflows responding to user commands.

27. **As AI assistants improve, the importance of defaults within mobile ecosystems will grow**. For example, if a user asks the AI assistant to purchase a pair of shoes, the payment app which the AI assistant uses to complete the request could be determined by a specific request, a user chosen default or a default which the user has not chosen. AI assistants will therefore increase and entrench the market power of mobile operating systems and will provide new ways which they can leverage into other markets.

*Connected devices play an increasingly important role in mobile ecosystems and this will accelerate over the next 5 years*

28. **Mobile phone owners often purchase a smartwatch offered by the same producer**. A 2023 study found that roughly 80% of iPhone users in the US own an Apple Watch, 71% of Google Pixel users own a Google Pixel Watch and 40% of Samsung phone users use a Samsung Galaxy Watch.[15] Through the sale of two or more devices that interoperate with each other, mobile ecosystems make it more difficult for consumers to switch to devices in different mobile ecosystems. The increased prevalence and interoperability of connected devices entrenches Apple and Google's market power in mobile operating systems.

29. **Connected devices should be considered in the context of SMS designations and interventions**. The effectiveness of conduct requirements will be significantly affected by the extent to which they take into account connected devices such as watches. For example, the European Central Bank initially criticised Apple's proposed commitments to settle the European Commission's investigation into Apple's NFC restrictions on the basis that it did not adequately deal with wearables such as Apple Watches.[16]

[15] Counterpoint Research, "Apple has 'highest stickiness' for smartwatch brand", 2 May 2023. Available here.

[16] European Central Bank, "Feedback on commitments offered by Apple over access restrictions to near-field communication technology", Letter from Piero Cipollone to Margrethe Vestager, 19 April 2024

**Q4: Which potential interventions should the CMA focus on in mobile ecosystems? Please identify any concerns relating to Apple's or Google's mobile ecosystems, together with evidence of the scale and/or likelihood of the harms to your business or to consumers.**

30. First, we set out a conduct requirement that would require both Apple and Google to open up access at the infrastructure layer, to the NFC antenna and secure element through their mobile operating systems, so that third party app developers can offer a CMP wallet with equivalent functionality to the payment solutions offered by Apple and Google. This would involve:

    a. Free unlimited and unmediated access to NFC functionality for making and taking all payment types.

    b. Free unlimited and unmediated access to the secure element in mobile devices.

    c. Third party apps to be treated on fully equivalent terms to Apple Pay and Google Pay.

31. Second, we set out a conduct requirement at the service layer, that would require Apple and Google to trade on fair and reasonable terms with all counterparties in financial services, in particular regarding their digital wallet and payment activities which are inherent parts of their mobile operating systems. This conduct requirement should be a general provision, but should then also contain specific provisions that:

    d. Require Apple to offer fair and reasonable pricing in relation to (i) the fees paid by issuing banks for use of Apple Pay (at the service layer); and (ii) the fees Apple charges issuing and acquiring banks and third party app developers for access to the NFC & SE platform (the infrastructure layer).

    e. require Apple in particular to enable counterparties to elect whether to contract for POS only, or for POS and online payments; and

    f. enable Apple's contractual counterparties to promote or steer customers towards alternative payment methods to Apple's payment methods.

32. We address each of the above proposed conduct requirements below.

**Open up access to the NFC antenna and secure element to third party app developers and ensure they can compete on fully equivalent terms with Apple and Google services**

*(a) Access to NFC functionality for making and taking payments*

33. Full, unlimited and unmediated third-party access to NFC functionality is essential for competition to develop for both making and taking payments, in relation to all current and future payment types.[17] Contractual relationships between the mobile operating system provider and rival digital wallet providers should be limited to that which is necessary to onboard any other type of native app into the Apple App Store.

34. **Third party digital wallets have been unable to access the Apple NFC on reasonable terms**:

    a. Apple restricts access to the NFC antenna on iPhones so that it cannot be used by CMP apps to facilitate CMP, except for Apple Pay, its own CMP service or for a fee using its

[17] Digital wallets should not be required to pay fees to Apple for use of the NFC antenna/secure element, or fees to Apple by any other means, including commissions on the App Store.

mediated NFC & Secure Element Platform. This prevents CMP app developers from creating mobile solutions that use the NFC antenna to make or receive payments. This (i) reduces choice available to consumers who are not able to use an alternative CMP digital wallet on iPhones; (ii) reduces innovation as potential digital wallet providers are unable to offer CMP digital wallet apps on iPhones; and (ii) disincentives potential digital wallet providers from offering them on Android devices as the total market potential is much lower and there are operational/marketing challenges of launching digital wallets which cannot be used by at least half of the potential digital wallet provider's customers.

b. With its iOS 18.1 update, Apple now proposes to provide mediated, controlled access to the NFC and SE as way to further leverage its mobile operating system to charge additional fees. There is no reasonable justification for Apple to seek to charge for access to a piece of technology (the NFC) that has been available in physical credit cards and low-cost devices for decades. Developers can access the NFC in Android devices without the need for any contract, free of charge. This is likely to have a significant dampening effect on the emergence of rival wallets. If mobile operating systems charge third party digital wallet providers for access to the NFC antenna, it will (i) increase marginal costs of rival digital wallet providers; (ii) reduce their ability to offer incentives to potential users to switch to their digital wallet; and (iii) reduce the incentive of issuers to encourage users to switch to an alternative digital wallet to avoid the high fees Apple requires for Apple Pay. Annex 2 provides further information on how Apple continues to leverage its mobile operating system into digital wallets, despite its NFC & SE Platform which does not provide a level-playing field to competitors.

35. Developers do not need to engage, contract with, or pay any fee to Google in order to access the NFC on Android devices, and the same should principle apply for Apple devices.

36. Access to NFC functionality and the secure element should be mandated for both Apple and Google, on terms that are equivalent to the terms on which access to banking APIs is mandated by the provisions of the Retail Banking Market Investigation Order and the provisions of the Payment Services Regulations.[18] In particular:

    a. APIs for access to NFC functionality and the secure element should be openly available, **free of charge**, and without any requirement for the app developer to enter into any additional contractual requirements that relate to access to the NFC functionality or the secure element.

    b. The app developer should not be required to enter into any additional contract or abide by additional terms other than the current Apple Developer Program License Agreement that applies to all developers.

37. **Apple must be prevented from restricting access to the NFC antenna on Apple devices for taking payments** –

    a. Apple restricts access to the NFC antenna and SE, not just for apps to make payments, but also to receive payments. This prevents third party app developers from producing apps that receive payments for the user on a free and unmediated basis.

[18] See for example, part 2 of the Retail Banking Market Investigation Order and Section 69(2)(d) of the Payment Services Regulations

b. Until Apple launched Tap to Pay in the UK in July 2023, third party app developers were prevented from producing apps that receive payments for the user. Tap to Pay allows merchants to use their iPhone to accept in-person contactless payments. At checkout, the merchant prompts the customer to hold their device/card near the merchant's iPhone, and the payment is completed using NFC technology. No additional hardware is needed to accept contactless payments through Tap to Pay on iPhone. This means that Apple generates fees from both issuers and acquirers.

c. Unlike Google, Apple requires card acquirers to enter into a contract in order to access the NFC antenna, and acquirers must pay Apple usage-based commissions whenever a merchant uses an Apple device to take a payment, as well as investing heavily in the marketing of "Apple" Tap to Pay ("TTP"). Further, Apple requires acquirers not to steer merchants towards the use of Android devices and does not permit additional fees to be paid by merchants reflecting the additional fees card acquirers pay to Apple. Acquirers therefore have higher costs for offering TTP on iPhone, but cannot offer higher prices only for TTP on iPhones, meaning that margins are significantly lower for TTP on iPhone transactions. Further, if acquirers try to pass on the additional costs of TTP on iPhone to merchants as a whole (not only those who use TTP on iPhone which is prohibited by Apple), then their offering to merchants is less competitive than card acquirers who do not offer TTP on iPhone. The combination of significant TTP fees for acquirers, the prohibition by Apple of acquirers passing these fees on directly to merchants who use TTP on iPhone and the inability of accepting payments using the iPhone's NFC antenna other than through negotiating with, and paying fees to Apple disincentivises acquirers and software providers alike to innovate to create new apps for receiving payments using iPhones or Android phones, or where they offer them, to promote them. Merchants therefore receive lower choice, range and quality of applications to receive contactless payments using any TTP (iPhone or Android) technology.

*(b) Free unlimited and unmediated access to the secure element*

38. **Full, unlimited and unmediated third-party access to the secure element is necessary to ensure a level playing field with Apple Pay.** Apple's commitments to the European Commission do not include secure element access and rely on HCE. The European Central Bank criticised this on the basis that it "*is expected to result in a user experience that is not at par with the user experience offered by ApplePay when it comes to authentication and transaction speed.*"[19] For example:
    a. The number of transactions that can be made through the secure element when an iPhone is offline is much higher than the number of transactions that can be made through HCE.

    b. When an iPhone has run out of battery, it can still be used to make payments on transit systems such as the London Underground using the secure element. This is not possible with HCE.

    c. Transaction speed is lower for HCE, compared to the secure element.

[19] European Central Bank, "Feedback on commitments offered by Apple over access restrictions to near-field communication technology", Letter from Piero Cipollone to Margrethe Vestager, 19 April 2024

d. HCE access would not facilitate the use of wearables such as the Apple Watch for contactless payments.

39. **Apple's restrictions on access to NFC functionality and to the secure element are not necessary for security purposes**:

    a. **These restrictions are not necessary to support security or privacy**. There is no credible evidence that providing NFC access to trustworthy third-party developers will lead to security or privacy risks. CMP facilitated by NFC will continue to benefit from tokenisation such that a unique digital token is transmitted rather than permanent card detail, thereby benefiting from an added layer of security.

    b. **Financial institutions have strong incentives to limit rates of fraud**. Financial institutions, which are often responsible for paying for fraud and bear significant reputational responsibility as custodians of their customers' funds, are highly incentivised to ensure effective controls are in place to mitigate fraud risk. It should be for the party who bears the financial liability and the financial regulators to decide on what restrictions are necessary to safeguard security.

    c. **The security of digital wallets would be improved if digital wallet providers could compete to offer the most secure digital wallets to customers**. Apple has prevented third parties from offering CMP digital wallets on iPhones, meaning that Apple has not had to compete with digital wallet providers on offering a more secure product. If there were multiple CMP digital wallet providers on iPhones that consumers and issuers could choose to use, they would compete with one other to offer the most secure product, thereby improving security.

*(c) Third party apps to be treated on fully equivalent terms to Apple Pay and Google Pay*

40. **Unrestrained free access to the NFC functionality and secure element on their own will not be sufficient to enable competition to emerge from rival digital wallets**. It will also be necessary to ensure that third party apps benefit from equivalent treatment within the Apple and Android mobile operating systems. We set out in Annex 3 prescriptive details of what we believe will be required. While many references are to Apple specifically, the same rules of access should apply in respect of Android devices.

*Range of devices*

41. **Mobile devices** running iOS or Android operating systems.

42. **iPads and other tablets** – the conduct requirements must apply to iPads if they have the relevant hardware in the same way that they do to iPhones. In the context of payments, merchants often use iPads or other tablets as their main in-store devices which can be used to take orders, track stock levels and inform employees. These devices could also be used to accept payments and deliver greater innovation for the benefit of merchants and customers.

43. **Apple Watch** – Wearable devices such as Apple Watch should be included within the conduct requirements as these may be used in combination with the mobile operating system and digital wallet to make payments.

*Other*

44. **Dispute resolution mechanism** – Apple must establish a dispute settlement mechanism under which Apple's decisions denying access to NFC input will be reviewed by independent experts.

45. Other red warning lights could also be used:

    a. **Permissions alerts**: A red light next to permission settings that might give Apple Pay preferential access to certain device features (like biometric authentication or location services), with guidance on granting similar permissions to rival wallets.

    b. **Data sharing notifications**: A red light in settings related to data sharing if Apple Pay has broader access to user data compared to other wallets, along with options to adjust these settings.

46. **Reporting requirement**: Apple should publicise regular compliance updates that set out in detail how it has complied with the requirements placed upon it.

47. **Full digital wallet functionality**: the conduct requirement should enable third party digital wallets to offer equivalent functionality to Apple Wallet, including for digital ID and tickets. Accordingly, Apple's PassKit framework, which allows digital wallets to store passes and tickets should be an open standard.

48. The conduct requirements set out above will need to be supplemented with a conduct requirement on Apple in particular to trade on fair and reasonable terms, otherwise Apple may be able to continue to inhibit the development of rivals through restrictions placed on its contractual counterparties. We address this requirement next.

**Apple to trade on fair and reasonable terms with financial services providers**

49. This conduct requirement could be used to achieve objectives (d), (e) and (f) above: a general requirement for Apple to trade on fair and reasonable terms with all financial services counterparties particularly at the level of the service layer of payments and digital wallets, through interventions on pricing, the unbundling of online payments from in-store payments, and the removal of restrictions on the ability of counterparties to promote alternative payment options.

*(d) Trading on fair and reasonable terms with financial services providers, particularly with regard to digital wallets*

50. Apple's current high prices (for card issuers for making payments and card acquirers for taking payments) are only possible due to the entrenched position of market power that Apple possesses. The US Department of Justice stated that "Apple predicts that it will collect nearly $1 billion in worldwide revenue on Apple Pay fees by 2025"[20]. Intervention at the infrastructure layer to open up access to Apple's hardware on non-discriminatory terms will hopefully over time generate competitive pressure for Apple Wallet and Apple Pay. However, Apple may still retain substantial and entrenched market power. Apple will therefore continue to be able to use the significant imbalance of bargaining power to maintain unfair pricing terms.

51. Accordingly, it is important that the CMA imposes a conduct requirement for Apple to trade on fair and reasonable terms with all financial services counterparties, including on pricing. This is particularly important in relation to (i) the fees paid by issuing banks for use of Apple Pay; and (ii)

[20] United States of America v Apple Inc, Case 2:24-cv-04055, 21 March 2024, available here, paragraph 188

the fees Apple charges issuing and acquiring banks and third party app developers for access to the NFC & SE platform.

*(e) Unbundling of online payments from in-store payments*

52. **Apple has leveraged its position to require issuers to support online payments made through Apple Pay, despite even higher fees to issuers than in-store payments**. Apple has leveraged its position in the supply of mobile operating systems and as an unavoidable trading partner for in-store payments into the market for online payments, by requiring issuers who support Apple Pay for in-store mobile payments to support online payments made through Apple Pay. Apple charges a further premium to issuers for online payments, even though it does not bear any of the financial risk associated with such payments, and it requires merchants who adopt Apple Pay to present Apple Pay as the primary displayed payment option. By contractually tying together in-store and online/in-app payments, Apple has been able to leverage its mobile operating system into the otherwise competitive online payment market.

53. The CMA should intervene in the contractual relations between Apple and card issuers, to enable card issuers to subscribe to Apple Pay for POS/in-store payments on a standalone basis, as well as in combination with online payments. This would help prevent Apple from leveraging its position in mobile operating systems into online payments through its digital wallet restrictions.

54. If banks are empowered to opt in for Apple Pay in respect of POS payments, but to opt out of Apple Pay for online payments, this may go some way to re-balancing the terms of trade regarding online payments. Banks may be able to rely on the availability of alternative digital wallets online to refuse to provision cards for Apple Pay online, unless Apple was to significantly reduce its fees.

*(f) Removal of restrictions on the ability of counterparties to promote or steer customers towards alternative payment options*

55. At present, Apple prevents issuers from discriminating against transactions, cards or accounts on the basis of their use of Apple Pay, despite the additional costs incurred by issuers.

56. Card acquirers who have contracted with Apple for Tap to Pay are prevented from promoting or steering merchants towards alternative payment methods (such as Android, or traditional card terminals). These alternative payment methods are less expensive, as Apple is the only party to charge specifically for the use of NFC technology in its devices.

57. The removal of this restriction in Apple's contracts will become particularly important on the card issuing side of the market if the first conduct requirement is effective to facilitating market entry by rival digital wallet providers.

**Q5: Are the potential interventions set out above likely to be effective, proportionate and/or have benefits for businesses and consumers?**

58. The CMA's Invitation to comment includes potential interventions that would be positive for consumers and retail financial services markets:

59. **Weak competition in mobile operating systems** – The CMA states that it "will explore whether interventions could be appropriate to encourage greater user switching between iOS and Android devices that would help to introduce some of this competitive pressure between the two ecosystems. This could for example include measures to prevent Apple and Google from unreasonably restricting the ability of users to transfer their data and apps across devices"[21]. Apple Wallet has been the only CMP digital wallet available on iPhone and it is not available on Android devices. Accordingly, if a user wishes to switch from an iPhone to an Android device, that user must also switch digital wallets. This therefore increases switching costs when consumers consider switching mobile operating system, reducing competition in the market for smartphones and the market for mobile operating systems. Measures to enable third party CMP digital wallets on iPhones, such as opening up access to the NFC antenna and SE, would therefore enable customers to retain their preferred CMP digital wallet when switching between iOS and Android, therefore reducing the barriers to switching.

60. **Leveraging of market power into adjacent activities (mobile operating systems)** – the potential interventions listed in paragraph 83(b) of the Invitation to Comment would be effective, proportionate and have benefits for businesses and consumers if they were implemented in the form set out above in response to Question 4.

*Opening up access to the NFC antenna and SE for third party app developers.*

61. The Invitation to Comment refers to "Requirements for Apple and Google not to restrict interoperability as required by third-party products and services… to function effectively and compete with Apple's and Google's own products and services" and "A requirement for Apple to make changes to rules or policies where necessary if its current rules or policies prohibit certain third-party services from operating on iOS devices", and points to digital wallets specifically. We understand this to include opening up access to the NFC antenna and SE for third party app developers.

62. **This intervention would have significant benefits for consumers and businesses**:

    i. Consumers would have more choice over which CMP digital wallet to use on iPhones;

    ii. Businesses would compete to offer better quality CMP digital wallets, including in areas such as maximising fraud protections, increasing innovation and quality for consumers;

    iii. Digital wallet providers would have greater incentives to launch CMP digital wallet apps that could now be used on both iOS and Android, providing benefits to Android users as well. The US Department of Justice stated: "Apple's smartphone monopoly means that it is not economically viable to invest in building some apps, like digital wallets, because they cannot reach iPhone users. This means that innovations fuelled by an interest in

[21] CMA Invitation to Comment, paragraph 83(a)

building the best, most user-focused product that would exist in a more competitive market never get off the ground"[22];

iv. Providers of ancillary services such as digital identity or loyalty cards would benefit from being able to offer CMP digital wallets, thereby improving the quality and viability of other connected services;

v. CMP could occur on iPhones without using Apple Pay, meaning that issuing banks could avoid some of the excessive high fees that they have to pay Apple. These fees lead to a reduction in the funds available for banks to invest in improving customer propositions and ultimately may be indirectly passed on to customers in the form of other fees or lower benefits. Consumer may therefore benefit from CMPs on iPhones which are not made through Apple Pay.

Further information on the benefits are set out in response to Question 4 above.

63. **This intervention would be proportionate**. Apple has already implemented commitments with the European Commission to enable third-party apps to access the NFC to enable CMPs, offering this without charge, albeit only granting access to the NFC antenna and not SE. While Apple's NFC & SE Platform will not address the extensive competition issues caused by Apple's refusal to provide access to the NFC antenna and SE on iPhones, it does mean the costs for implementing any remedies on providing access to the SE will be significantly reduced.

64. **This intervention would be effective** if it includes comprehensive measures to improve competition set out in response to Question 4.

*Improving choice architecture and defaults is essential to achieve effective outcomes when opening up access to the NFC antenna and SE*

65. In the context of leveraging market power through mobile operating systems into adjacent activities, the Invitation to Comment refers to "Requirements for Apple and Google to make changes to choice architecture in factory settings or subsequent device settings; in order to enable users of mobile devices to make active and informed choices about the product or services they use and/or set as a 'default' service"[23]. This is particularly relevant when designing conduct requirements concerning digital wallets as Apple has developed an extensive system of defaults and pre-installations. Apple Pay and Wallet are pre-installed on iPhones, part of the set-up process, and considered necessary in order for the user to "Finish Setting Up [Their] iPhone". If the user does not upload a card to the Wallet to enable Apple Pay, then they are notified that this still needs to be done, including using a red light to show this is not complete.

66. As set out in response to Question 4 and in Annex 3, the conduct requirements to improve competition in digital wallets should include, *inter alia*:
    a. **Defaults** - Apple must enable iOS users to change or select a payment application as the default for NFC In-Store Payments. Changing the default app should only require the user to make a few clicks. Developers should be able to prompt users to easily set up their default payment app and redirect users to the default NFC settings page.

[22] United States of America v Apple Inc, Case 2:24-cv-04055, 21 March 2024, available here, paragraph 14
[23] CMA, Invitation to Comment, paragraph 84(b)(iii)

b. **Neutral wording** - All choice screens should use neutral language that does not favour Apple Pay. For example, wording like "Choose your default payment method" rather than "Set up Apple Pay now".
c. **Periodic reminders** - Regular prompts should remind users that they can switch their default payment method. These could appear at relevant intervals or after a system update, allowing users to reconsider their preferred payment option.
d. **Pre-installed payment options**: During the initial setup of the device, users should be presented with a choice screen that allows them to select their preferred payment wallet from a list that includes both Apple Pay and rival options. This step should be part of the onboarding process and provide equal prominence to all options. Users should therefore have to opt-in to a payment wallet rather than be defaulted to Apple Pay.

67. While a conduct requirement enabling third parties to access the NFC antenna and secure element would be beneficial, Apple may continue to use its substantial and entrenched market power to maintain unfair pricing terms. Accordingly, it is important that the CMA imposes a conduct requirement for Apple to trade on fair and reasonable terms with all financial services counterparties, including on pricing. This is particularly important for issuing banks which Apple is already charging excessive prices for use of Apple Pay and for use of the NFC & SE Platform.

**Q6: What key lessons should the CMA draw from interventions being considered, imposed and/or implemented in relation to mobile ecosystems in other jurisdictions?**

*European Commission*

68. The European Commission has accepted commitments offered by Apple to address its concerns relating to Apple's refusal to grant access to the NFC antenna used for CMPs with iPhones in stores.[24] These commitments contain many features which are necessary, but not sufficient, to improve competition for digital wallets and to prevent Apple from leveraging market power in this area:

    a. **Free of charge** – third-party wallet providers are able to access the NFC antenna on iOS devices free of charge, without having to use Apple Pay or Apple Wallet;

    b. **Default app** – users are able to set a third-party payment app as their default app for payments in-store and developers are able to prompt users to easily set up their default payment app and redirect users to default settings;

    c. **Wider functionalities** – users of third-party payment apps are able to use Field Detect (which opens the user's default payment app when a locked iPhone is presented to an NFC reader), Double-click (which launches the default payment app when double clicking the phone's side or home button), and authentication tools such as Touch ID, Face ID, and device passcode; and

    **d. Monitoring and disputes –** there is a monitoring mechanism and a separate dispute settlement system to allow for independent review of Apple's decisions restricting access.

69. The commitments to the European Commission are intended to address specific concerns with Apple's conduct following a narrowly defined antitrust investigation, rather than resolving all the issues around digital wallets which are harming consumers and businesses.

70. Apple's commitments to the European Commission do not include secure element access and rely on HCE. The European Central Bank criticised this on the basis that it "is expected to result in a user experience that is not at par with the user experience offered by Apple Pay when it comes to authentication and transaction speed."[25] For example:
    e. The number of transactions that can be made through the secure element when an iPhone is offline is much higher than the number of transactions that can be made through HCE.

    f. When an iPhone has run out of battery, it can still be used to make payments on transit systems such as the London Underground using the secure element. This is not possible with HCE.

    g. Transaction speed is lower for HCE, compared to the secure element.

[24] European Commission, "Commission accepts commitments by Apple opening access to 'tap and go' technology on iPhones", 11 July 2014. Available here

[25] European Central Bank, "Feedback on commitments offered by Apple over access restrictions to near-field communication technology", Letter from Piero Cipollone to Margrethe Vestager, 19 April 2024

h. HCE access would not facilitate the use of wearables such as the Apple Watch for contactless payments.

i. The commitments do not adequately address using the NFC antenna to take payments.

71. It was reported that the European Central Bank removed its objections after accepting that they fell outside the scope of the European Commission's narrow abuse of dominance investigation.[26] Accordingly, the final commitments explicitly state that they are without prejudice to Apple's obligations under the Digital Markets Act or the Digital Euro (for which access to the secure element is seen as essential).[27]

72. The European Commission's Proposed Regulation for the Digital Euro requires original equipment manufacturers and providers of electronic communication services to make the secure element in their device accessible to developers.[28] It also empowers the European Commission to adopt a delegated act to further specify the requirements to effectively achieve this non-discriminatory access.

73. The National Association of German Cooperative Banks has also criticised the commitments.[29] Security and avoiding payment fraud is very important to the European Central Bank and the German banking industry and they would not advocate for access to the secure element if it was considered that this would undermine CMP security.

*US Department of Justice*

74. The United States Department of Justice has sued Apple, in part due to its restrictions on access to the NFC antenna and SE. This has several implications:

a. **These harmful practices affect competition between mobile operating systems, not just leveraging** – By limiting access to the NFC antenna and SE, Apple has prevented the creation of a CMP digital wallet that can be used on both iOS and Android devices. The Department of Justice stated "the absence of cross-platform digital wallets with tap-to-pay capability on the iPhone makes it harder for iPhone users to purchase a different smartphone."[30]

b. **The excessively high fees issuing banks pay to Apple harm consumers** – As the Department of Justice states, "Apple's fees are a significant expense for issuing banks and cut into funding for features and benefits that banks might otherwise offer smartphone users… third-party digital wallets would reduce Apple's ability to charge banks high fees when users make payments using Apple Wallet, which ultimately cost consumers through higher prices or other reductions in quality. Alternative digital wallets could also provide smartphone users better rewards, e.g., cash back, as well as a more private,

[26] MLex, "Apple ends EU probe of iPhone wallet with extended antitrust concessions", 11 July 2024
[27] Apple, "Case AT.40452 – Mobile Payments Proposal of Commitments to the European Commission", paragraph 1.3
[28] Proposal for a Regulation of the European Parliament and of the Council on the establishment of a digital Euro, 28 June 2023, Article 33
[29] Global Competition Review, "Apple's NFC commitments will be insufficient, German banks say", 20 June 2024. Available here.
[30] United States of America v Apple Inc, Case 2:24-cv-04055, 21 March 2024, available here, paragraph 110

secure payment experience from a user's preferred financial institution rather than being forced to go through Apple"[31];

c. **Apple receives enormous payments from issuing banks through Apple Pay fees** – The US Department of Justice stated that "Apple predicts that it will collect nearly $1 billion in worldwide revenue on Apple Pay fees by 2025"[32]. This shows the enormous detriment to other businesses caused by Apple's restrictions and demonstrates that measures to improve competition in digital wallets will be proportionate to the benefits.

d. **Apple's restrictions have impacted online payments as well as in-store payments** – "Apple further impedes the adoption of digital wallets by restricting others from offering the same ability to authenticate digital payment options on online checkout pages. By limiting the ability of third-party wallets to provide a simple, fast, and comprehensive solution to online purchasing, Apple further undermines the viability of such wallets."[33]

[31] United States of America v Apple Inc, Case 2:24-cv-04055, 21 March 2024, available here, paragraphs 113, 130
[32] *Ibid.*, paragraph 188
[33] *Ibid.*, paragraph 115

**Annex 1 - Background on the financial services activities covered in this response**

1. Contactless mobile payments (CMPs) are payments that consumers make by using apps installed on their mobile devices. When a consumer wants to use a CMP app to make a payment, the app communicates with a retailer's point-of-sale (POS) system. The CMP app communicates with the NFC antenna on the user's device to send the payment information to the retailer's POS terminal.

2. NFC is an agreed messaging standard for communication using radio-frequency electromagnetic waves to exchange information (without contact). Apart from mobile devices, NFC technology is also used for contactless plastic cards, wearable fobs and stickers. Retailers only need to have POS terminals capable of effecting contactless payments (e.g. contactless plastic cards) in order to be able to accept CMPs. As a result, acceptance of payments using NFC technology is nearly universal.

3. In CMP, the mobile device uses the consumer's card information to make the transaction through the transmission of a token (a 'digital primary account number') to the retailer's POS terminal. The DPAN is a token that acts as an alternative to the payment card's Primary Account Number. This process of tokenisation reduces the risk of a consumer's payment details being stolen electronically during a CMP. We understand that this tokenisation process generally occurs under the industry standard known as the 'EMV specification'.

4. Apple Pay works by storing these tokens on the Secure Element of the mobile device. Google Pay uses a technique called Host Card Emulation (HCE), which stores digital tokens in the cloud, only storing a small number of tokens at a time. A secure element is a physical chip installed within a device. CMP apps that use secure elements store sensitive data within the secure element and communicate with it to obtain the necessary token to make a payment.

5. When HCE is used, the sensitive data is stored in the cloud rather than on the mobile device. Tokens are transmitted remotely to the consumer's device using the internet and mobile network and stored there until a payment is used. The device receives a small number of time-limited single-use tokens each time. Once single-use tokens are used or expire, new tokens must be provided for a payment to be made.[34] HCE therefore only enables a small number of CMP transactions to be made while a device does not have access to the internet or mobile network.[35]

6. Apple restricts access to the NFC antenna on iPhones so that it cannot be used on reasonable commercial terms by CMP apps to facilitate CMP, except for Apple Pay, its own CMP service. This prevents CMP app developers from creating mobile solutions that use the NFC antenna to make or receive payments. Apple Wallet supports transit cards and other non-card payments, but does not support A2A payments such as Open Banking or P2P payments.

7. Apple's recent proposal to provide access to the NFC and SE in exchange for a fee is likely to have a significant dampening effect on the emergence of rival wallets. If mobile operating systems charge third party digital wallet providers for access to the NFC antenna, it will (i) increase

[34]When a CMP transaction is made, the CMP app takes the token from the secure element on the device, or from the cloud in the case of HCE, and sends these through the NFC antenna to the retailer's POS terminal.
[35] See PSR, "Contactless Mobile Payments Report", July 2018, paragraphs 3.42 – 3.47

marginal costs of rival digital wallet providers; (ii) reduce the ability of them to offer incentives to potential users to switch to their digital wallet; and (iii) reduce the incentive of issuers to encourage users to switch to an alternative digital wallet to avoid the high fees Apple requires for Apple Pay.

8. Apple requires issuers who provision cards for Apple Pay to make them available for online purchases as well as in-person purchases.

9. In July 2023, Apple launched Tap to Pay on Apple devices (both iPhones and iPads) in the UK. This allows merchants to use their iPhone to accept Apple Pay, contactless credit and debit cards for in-person contactless payments. At checkout, the merchant prompts the customer to hold their iPhone or Apple Watch to pay with Apple Pay, their contactless credit or debit card, or other digital wallet near the merchant's iPhone, and the payment is completed using NFC technology. No additional hardware is needed to accept contactless payments through Tap to Pay on iPhone.

**Annex 2 – Apple continues to leverage its mobile operating system into digital wallets, despite its NFC & SE Platform which does not provide a level-playing field to competitors**

1. With its iOS 18.1 update,[36] Apple now proposes to provide mediated, controlled access to the NFC and SE, for a fee. There is no reasonable justification for Apple to seek to charge for access to a piece of technology (the NFC) that has been available in physical credit cards and low-cost devices for decades. Developers can access the NFC in Android devices without the need for any contract, free of charge. As we explain below, Apple's proposals will do nothing to open up competition in the downstream market for digital wallets.

2. Apple will continue to have substantial and entrenched market power through its decade-long monopoly of digital wallet provision on the iPhone, reinforced by its use of defaults and "nudges". For the past decade, Apple has had a 100% market share for the provision of CMP digital wallet services on iPhones. Just as the App Store is the app store for the iPhone, Wallet is the wallet for the iPhone. It is presented as the iPhone wallet, not the Apple Wallet.

3. This will continue following the introduction of the NFC & SE Platform. Following the Retail Banking Market Investigation, the CMA required extensive reforms to improve switching in bank accounts which could be looked to when considering changes required to ensure switching in digital wallets. Further, when Apple launched Apple Pay, it required issuers to promote Apple Pay through a multi-million pound marketing campaign.

4. Apple will continue to use defaults and nudges to maintain its market power and lower the likelihood of switching. When a user sets up their iPhone, they are repeatedly notified if they have not loaded card details into Apple Wallet in order to make payments using Apple Pay. This is considered as necessary to "Finish Setting Up Your iPhone", alongside Apple ID, Siri and Face ID. These default settings and behavioural nudges will continue following the launch of the NFC & SE Platform which will shield Apple Wallet from effective competition.

5. Fees imposed on third party digital wallet providers will reduce the incentives for market entry and will harm innovation. Apple charging third party digital wallet providers for access to the NFC antenna will:
    a. increase marginal costs of rival digital wallet providers;
    b. reduce their ability to offer incentives to potential users to switch to their digital wallet; and
    c. reduce the incentive of issuers to encourage users to switch to an alternative digital wallet to avoid the high fees Apple requires for Apple Pay.

6. There has been a distinct reduction in enthusiasm for the launch of mobile wallets among potential partners of issuing banks since Apple's announcement. Prior to the announcement, there was an assumption that a remedy that was at least equivalent to the EU commitments would soon be imposed in the UK, which would effectively open up the market. The spectre of

[36] Apple announced that it will launch an "NFC & SE Platform" for contactless transactions in iOS 18.1. This will involve APIs that support contactless transactions within compatible iOS apps using the NFC antenna and Secure Element of an iPhone. App developers will need to request access to the NFC & SE Platform, enter into a commercial agreement with Apple and sign a Confidentiality Agreement with Apple.

fees being charged by Apple to developers who wish to access the NFC and/or SE has had a significant chilling effect.

**Annex 3 – Third party apps to treated on fully equivalent terms to Apple Pay and Google Pay**

1. Third party apps should benefit from equivalent treatment within the Apple and Android operating systems. We set out below prescriptive details of what we believe will be required. While many references are to Apple specifically, the same rules of access should apply in respect of Android devices.

*Parity of functionality*

2. **Field Detect –** When a user presents their locked iPhone to an NFC reader, the iPhone then presents the user with Apple Pay as the default payment application for CMPs. This should also apply to the default payment application which the user has chosen in advance that it intends to use to make CMPs.[37]
3. **Double Click** – When an iPhone user presents their iPhone to a contactless payment in order to initiate a payment, they can double-click the side button for Face ID-enabled devices or the home button for Touch ID-enabled devices in order to make the payment. Users should also be able to do this when making payments using third party apps.[38]

4. **Suppression Mechanism** – Third party apps must be able to utilise a Suppression Mechanism when the payment app is open in the foreground.[39] The Suppression Mechanism means a functionality will enable payment applications to complete CMP without interference by temporarily suppressing Apple Pay or any other payment application that has default access to NFC, promoting co-existence of multiple payments applications mobile devices.
5. **Authentication mechanisms** – developers must have access to the Location Authentication Framework that other developers have access to, to enable Touch ID, Face ID, and device passcodes for their payment applications. This includes access to necessary APIs for integration, ensuring smooth and secure user experiences across all payment apps.[40]

6. **Loyalty cards** – developers must be able to make digital wallet apps with equivalent functionality to the Apple Wallet in terms of using NFC to communicate other information such as loyalty programs, digital identity and receipts. It may require Apple to offer open standards so that digital wallets can offer these services on an equivalent basis to Apple.[41]

7. **Express Mode –** In certain circumstances the user should be able to make payments by tapping their phone without waking or unlocking the iPhone, or authenticating with Face ID, Touch ID or the passcode. For example, a user should also be able to initiate a payment on a transit system when their phone is turned off or has run out of battery. It should therefore enable equivalent functionality to Apple Pay's Express Mode.

*Parity of ecosystem functionality*

8. **Settings parity** - Rival wallets should have the same visibility and ease of access in device settings as Apple Pay. This includes the ability to manage default payment settings, configure payment preferences, and access transaction history.

[37] See section 3.2(4) of Apple's commitments to the European Commission regarding Apple Pay
[38] *Ibid,* section 3.2(5)
[39] *Ibid,* section 3.2(6)
[40] *Ibid,* section 3.5
[41] This would mirror the final commitments accepted by the European Commission regarding Apple Pay which explicitly acknowledge that payment app developers are not prevented from combining NFC payment functionality with other NFC functionalities and use cases.

9. **Defaults** – Apple must enable iOS users to change or select a payment application as the default for NFC In-Store Payments.[42] Changing the default app should only require the user to make a few clicks. Developers should be able to prompt users to easily set up their default payment app and redirect users to the default NFC settings page.[43]

10. **Neutral wording** - All choice screens should use neutral language that does not favour Apple Pay. For example, wording like "Choose your default payment method" rather than "Set up Apple Pay now".

11. **Mobile browser functionality –** APIs in Safari, other mobile browsers and mobile browser engines should have an equivalent functionality and prominence for third party payment applications as they have for Apple Pay and Wallet. This includes the relevant API showing which payment application has been enabled as the default on the device.

*Parity of discovery opportunities*

12. **App store** – developers must be able to distribute applications which access the NFC antenna by listing them on Apple's App Store in the UK. This is necessary to ensure that they can be accessed and downloaded by users.[44]

13. **Visibility in digital stores**: Require Apple to provide equal marketing and visibility for rival wallets in the App Store, including in search results and featured app sections.

**Pre-installed payment options**: During the initial setup of the device, users should be presented with a choice screen that allows them to select their preferred payment wallet from a list that includes both Apple Pay and rival options. This step should be part of the onboarding process and provide equal prominence to all options. Users should therefore have to opt-in to a payment wallet rather than be defaulted to Apple Pay

*Prompting/informing users that they can switch*

14. **Educational notifications** - iOS users should be sent notifications or educational content that informs them about how to switch their default wallet. This helps users make informed choices without feeling locked into a single option.

15. **Periodic reminders -** Regular prompts should remind users that they can switch their default payment method. These could appear at relevant intervals or after a system update, allowing users to reconsider their preferred payment option.

16. **Contextual reminders -** Implement features that periodically remind users of the availability of alternate payment options. For instance, prompts could appear after the user completes a transaction, asking if they want to continue using their current wallet or explore other options.

17. **Transparency in default changes** - When a user updates their software, their default third party wallet app should remain their default choice. If default payment settings are changed without the express intervention of the user (which should be avoided as far as possible), Apple must notify the user clearly and ensure they have easy access to revert or modify these settings.

18. Red warning lights could also be used:

[42] See paragraphs 3.7 to 3.9 of Apple's commitments to the European Commission regarding Apple Pay
[43] This was included in the revised commitments that the European Commission accepted regarding Apple Pay
[44] See paragraph 3.1 of Apple's commitments to the European Commission regarding Apple Pay

a. **Default wallet notifications**: A red warning light or icon next to the default payment setting if Apple Pay is set as the default wallet, with a prompt to review or consider other available wallets.

b. **NFC configuration alerts**: A red light next to NFC settings if the configuration is restricted to Apple Pay, with a suggestion to enable third-party wallet access.

*Reducing switching costs*

19. **User data portability**: Mandate that users can easily transfer their card numbers ('bank card number portability'), payment data, transaction history, and wallet settings between Apple Pay and other wallets if they switch services. This could draw on lessons from the Current Account Switch Service and remedies from the Retail Banking Market Investigation. It could also form part of a broader measure to ensure that users are able to change operating systems.

20. **Developer access to transaction data**: Provide third-party wallet developers with access to anonymised transaction data (with user consent) to enable them to improve their services and offer personalised experiences.

*Parity of discovery opportunities*

21. **App store** – developers must be able to distribute applications which access the NFC antenna by listing them on Apple's App Store in the UK. This is necessary to ensure that they can be accessed and downloaded by users.[45]

22. **Visibility in digital stores**: Require Apple to provide equal marketing and visibility for rival wallets in the App Store, including in search results and featured app sections.

23. **Pre-installed payment options**: During the initial setup of the device, users should be presented with a choice screen that allows them to select their preferred payment wallet from a list that includes both Apple Pay and rival options. This step should be part of the onboarding process and provide equal prominence to all options. Users should therefore have to opt-in to a payment wallet rather than be defaulted to Apple Pay.

[45] See paragraph 3.1 of Apple's commitments to the European Commission regarding Apple Pay.