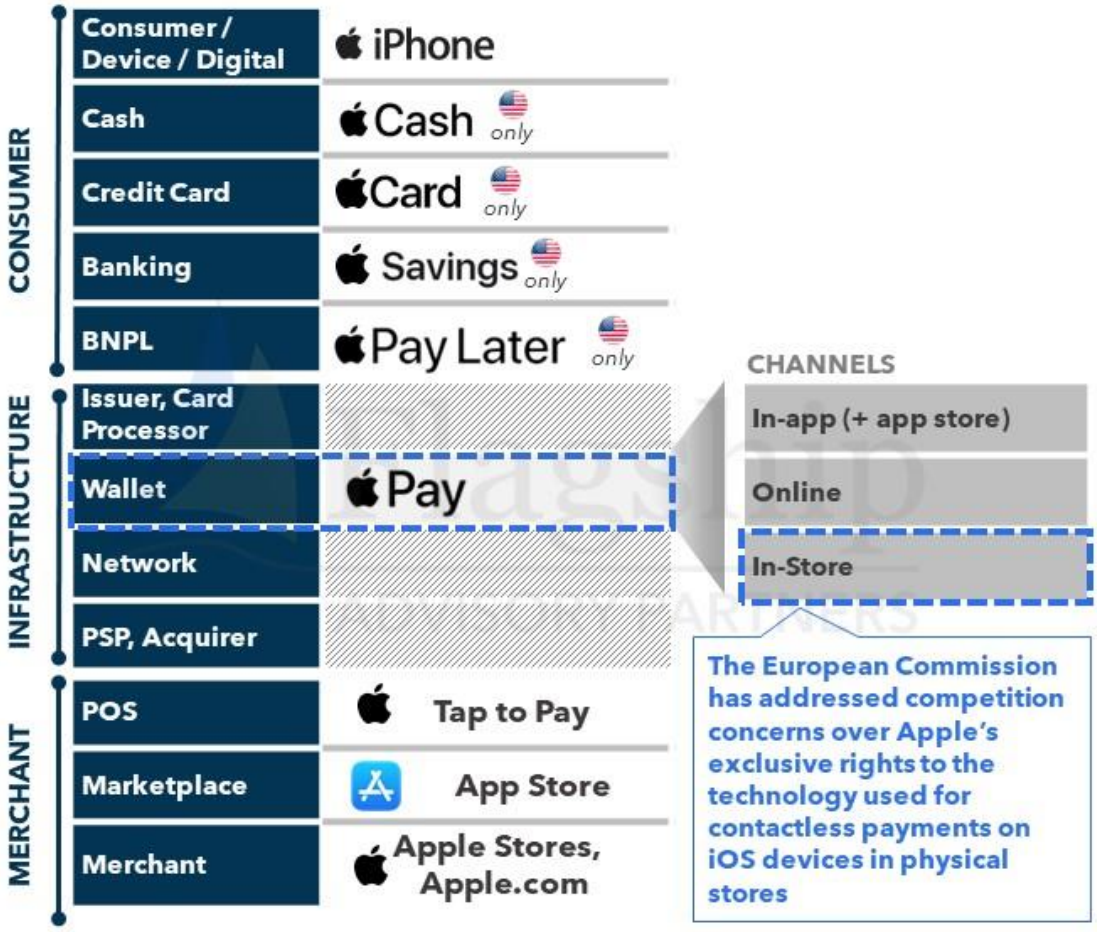
by Elisabeth Magnor and Erik Howell, 12 March 2024

Apple Opening Up iOS NFC in Europe – Will it Change the Game for In-Store Payments?

Gaining access to the physical POS ('Point-of-Sale') has been a pain point for local wallets and APMs ('Alternative Payment Methods') in several European markets. Apple Pay, Google Pay, and contactless cards have excellent customer experiences and broad acceptance, and APMs have struggled to match these card-centric form factors in terms of ease of use. European regulators have focused on Apple for blocking third-party access to the NFC ('Near Field Communication') element in iOS devices, as this would be required (in regulators' view) to increase competition and access to payments for European users in stores. In response to regulatory pressure, Apple committed, effective 19 January 2024 to allow third-party wallet and payment providers to access iOS devices' NFC functionality via APIs, free of charge.

Opening access to iOS device NFCs is a big deal for wallet providers that run on card rails (e.g. PayPal, Google Wallet, MobilePay, Vipps), but likely not (at least for the moment) for APMs that run on account-to-account ('A2A') rails (e.g. Swish, Blik, iDeal), as the underlying technology applies to card, not A2A rails. In this article, we explain the commitments made by Apple to European regulators to open up iOS NFCs, discuss potential implications for ecosystem participants, and whether this will change the game for in-store mobile payments.

Figure 1: Apple's Fintech Product Overview



Source: Flagship Advisory Partners
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Background

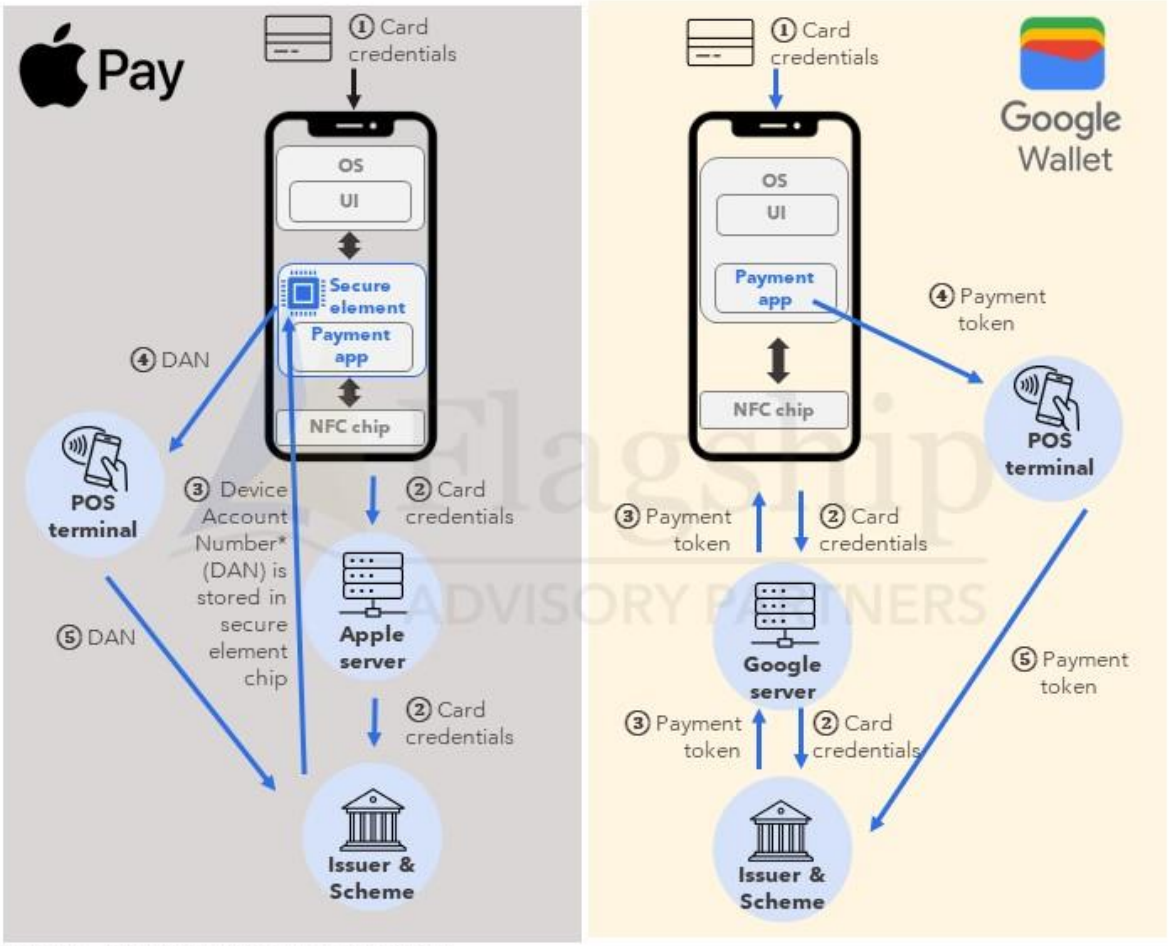
NFC is the technology enabling the communication of contactless payments between a form factor (e.g., a smartphone or a plastic card) and a POS terminal. Since the launch of Apple Pay nearly 10 years ago, Apple has held exclusive rights to access the NFC technology in its proprietary iOS devices, essentially forcing all iOS device holders to use Apple's proprietary Wallet (also referred to as Apple Pay) to make NFC payments in-store. This exclusivity has caused headaches for banks (which must either pay Apple fees on volume run through Apple Pay, or simply not be able to provide mobile payments to the significant portion of bank customer bases that use iOS devices) and other rival wallets, which have struggled to create a similarly seamless user experience for in-store payments (e.g. QR codes and BLE beacons being significantly clumsier at the physical POS than NFC). As a result, Apple has been blamed by the European Commission for hindering innovation, freedom to choose, and fair competition. A formal investigation of Apple by the European Commission was initiated in 2020 and concluded that Apple violates EU competition rules and abuses its dominant market position by limiting access to the NFC hardware required to make payments at physical POS devices. Per European Union rules, breaches could result in significant fines up to 10% of Apple's global revenue. Apple proposed in January 2024 to make several commitments as a response to competition concerns by opening access to their NFC technology to third parties. The European

Commission has invited feedback on these commitments and could decide to push for further changes.

Commitments

The most critical commitment made by Apple is enabling access to iOS device's NFC technology via HCE ('Hosted Card Emulation'). Apple has not committed to grant direct access to the 'secure element' chip within the iOS device itself but has offered to allow 'equivalent access' via HCE, similarly to how Google Wallet enables NFC payments today (see Figure 2 on how the two wallets compare). In simple terms, in the 'HCE mode' there is no direct reliance on a secure element to complete a transaction as payment credentials are stored and transactions are completed in the cloud, rather than on the device itself.

Figure 2: Apple Wallet vs Google Wallet



Note: OS = Operating System; UI = User Interface
*The DAN is the tokenized version of the payment card and is stored in the physical hardware chip inside the iOS device. This is the reason why iOS users will need to add the same card to each iOS device they hold (e.g. iPhone and an iWatch).
Source: Flagship Advisory Partners, ByteByteGo
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Other important commitments by Apple include allowing the iOS device to default to third-party payment apps (effectively allowing a third-party wallet, not Apple Wallet, to display a card when tapping the iOS device at a contactless POS terminal), and enabling the utilization of Face ID, Touch ID, and other authentication features at a physical checkout. To gain access to Apple's NFC technology, developers must be authorized under the 'Apple NFC Entitlement Program', and will need to enter into a binding license agreement with Apple. Apple has also developed a dispute resolution mechanism where

Apple's decision to deny access to third parties will be reviewed by independent experts. Apple has stated that the solution will be ready in Q1 2024, and the European Commission has gathered feedback from market participants. This implies that there is room for changes to be made, and likely a delayed implementation timeline. Third parties seeking access to iOS solutions will require time to prepare and build, so we are unlikely to see a live solution anytime soon. See Figure 3 for a summary of Apple's commitments.

Figure 3: Summary of Apple Commitments

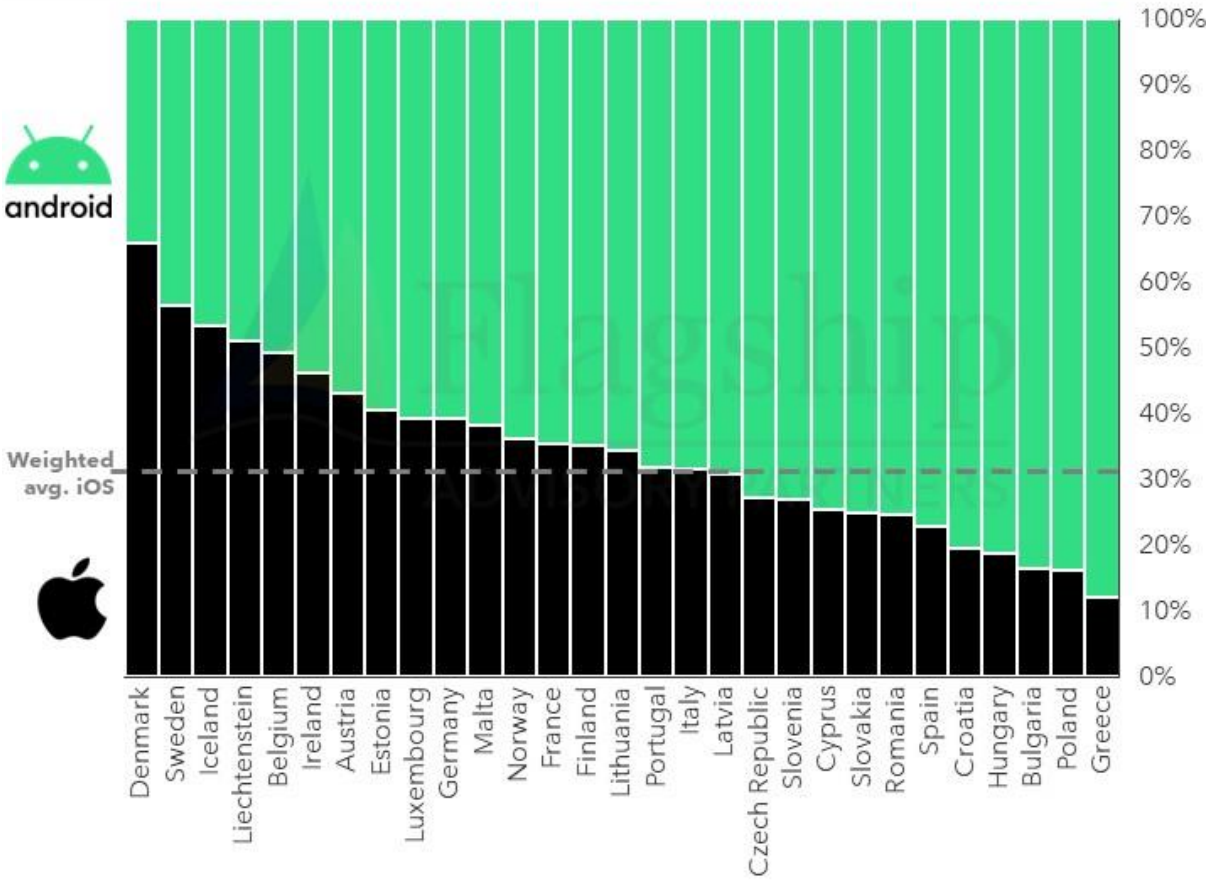
Access to NFC technology via HCE	▪ Third parties will not gain direct access to the secure element chip embedded in the Apple device but has offered to allow 'equivalent access' via NFC components. The HCE mode securely stores payment credentials in the cloud and completes transactions using NFC, without relying on the still Apple-controlled in-device embedded secure element
Allow defaulting of other apps	▪ Allow non-Apple, third party apps to be the default payment method when tapping the phone at a payment terminal ▪ Apple states it will create functionality that makes it easy to change the preferred default payment method
Access to other essential functionalities	▪ Enable utilization of 'Touch ID', 'Face ID', and device passcode, essential for authorizing payments ▪ Enable utilization of 'Field Detect' (the user presents a locked device to an NFC reader/POS terminal, and the device automatically presents the default payment application) ▪ Enable 'Double-click' (the physical double-clicking of the side button for FaceID devices, or the home button for ToucID devices, to launch the payment application for contactless payments)
Access at zero cost	▪ Access will be free, including for in-store payments carried out through HCE payment applications
Apple to create necessary APIs	▪ Apple will create the necessary APIs to allow access to the NFC component in the HCE mode ▪ Allow access and interaction through APIs for iOS devices, without having to use Apple Pay or Apple Wallet
Developers to be Apple-authorized	▪ Developers must be authorized under the Apple NFC Entitlement Program ▪ Developers must enter into a binding license agreement with Apple
Applicability and geographies	▪ Applies to developers and third-party solution providers in the EEA ▪ iOS users with an Apple ID located within the EEA ▪ Apple will not prevent payments in stores located outside the EEA
Dispute resolution mechanism	▪ Apple will establish a dispute resolution mechanism, where Apple's decisions to deny access to the NFC technology will be reviewed by independent experts
Term	▪ NFC technical solution to be ready by March 7, 2024

Source: European Commission
https://ec.europa.eu/commission/presscorner/detail/en/ip_24_282

Implications and Opportunities

As we have discussed in prior insights (The Rise of Alternative Payment Methods in Europe), the physical POS has proven to be a pain point for most payment apps. Note that with 'payment apps' we mean everything from A2A-based APMs to card-based wallets, which can come in a range of constructs, as explained in the article 'Digital Wallets Thriving, Proliferating in All Directions'. Many payment apps have tried and failed in the physical channel primarily due to a worse user experience than contactless cards and wallets like Apple Pay, when (arguably) apps need a superior user experience and/or value proposition to gain user adoption. Some providers of these alternative payment apps have cited the closed ecosystem of Apple as a contributing factor to their failure; iOS devices are after all a significant proportion of devices in Europe (see Figure 4), and finding an equally seamless solution to NFC (which has been exclusive to Apple Wallet and Apple Pay) at the physical POS is hard.

Figure 4: iOS vs Android Operating Systems in the EEA (2023)



Source: World Population Review
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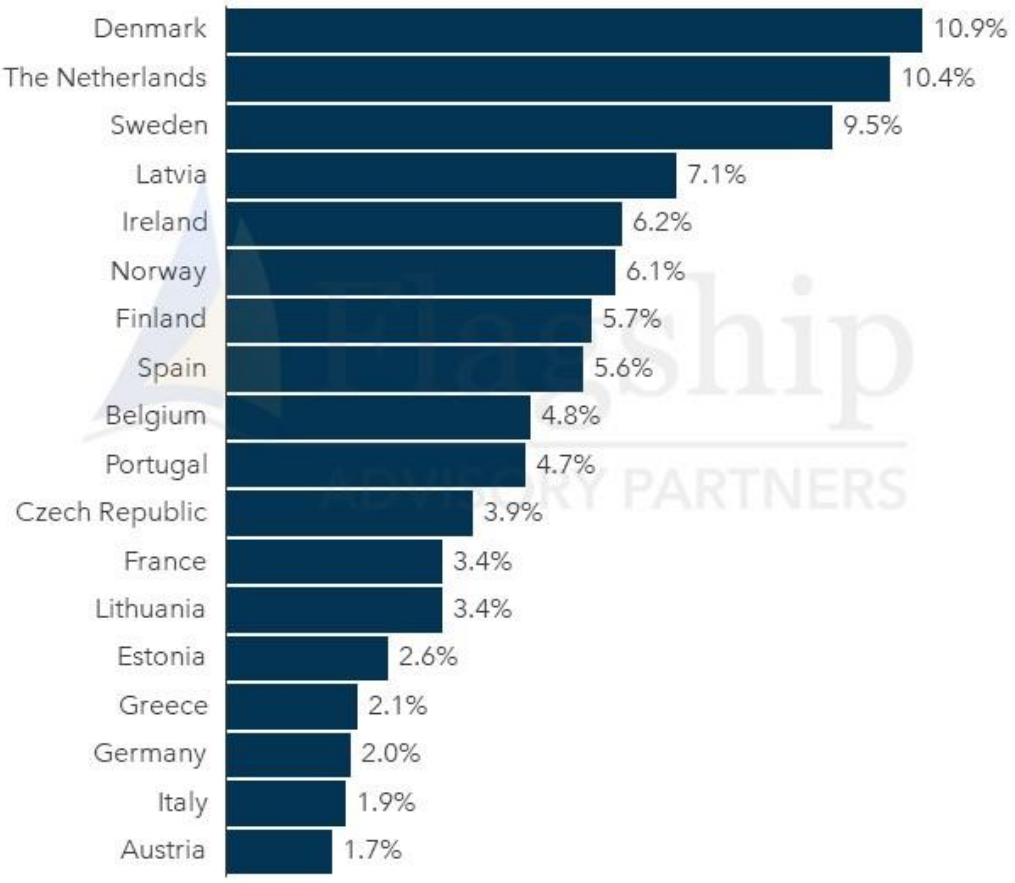
Wallets as a means for payment in-store to date represent a relatively small proportion of payment volumes in several European markets (see Figure 5), which leaves white space to grow. Market participants like issuers and competing wallets (that run on card rails), might therefore have popped the champagne when reading the news on Apple's commitments to open up their NFC technology, as new opportunities now arise. For example, issuers can take back more ownership over their customers if they tightly integrate a wallet with

their banking app, and for rival wallets, it can make sense to issue own-branded cards and control the full user experience. While this is the moment some have waited for, realizing advantages (e.g., reducing fees paid to Apple for Apple Pay, changing consumer behaviors) are likely to be challenging to achieve. Opportunities will be less prominent for other participants like accounts-based payment methods, merchants, and PSPs. We summarize opportunities and requirements to achieve these in Figure 6 below.

Figure 5: Payment App Usage at the Physical Point-of-Sale
(% of total payment volume including cash, cards, other, 2022)



Note: Penetration is based on survey data
Source: EA 19 markets: Study on the payment attitudes of consumers in the euro area (SPACE) by ECB, Rest: Global Data

Figure 6: Opportunities for Industry Participants

PARTICIPANT	OPPORTUNITY	REQUIREMENTS TO ACHIEVE
Issuers	▪ Circumvent Apple Pay issuing fees and hence reduce costs ▪ Create own wallet solution and tightly integrate with bank app ▪ Serve young cardholders (Apple Pay has an age limit)	▪ Give customers compelling reason to change behavior and pay via bank app rather than Apple Wallet ▪ Technical enablement
Merchants	▪ Makes it easier to integrate merchant-branded payments into merchant apps	▪ Give customers compelling reason to change behavior and pay via merchant app ▪ Technical enablement
PSPs	▪ Offer white-label wallet tech to merchants ▪ Enable APM rails	▪ Technical enablement
Wallet Apps (card-based)	▪ Issue own-branded cards via core app, thereby controlling the full UX	▪ Give customers compelling reason to change behavior and pay via wallet app ▪ Technical enablement
APMs (account-based)	▪ Consider card issuing as bridge to APM rails ▪ Convince PSPs to enable APM rails, then use HCE as proxy	▪ Give customers compelling reason to change behavior and pay via APM app ▪ Technical enablement ▪ Getting PSPs to support rails
Apple	▪ Provide an ever-stronger incentive for users to select Apple Wallet as the default	▪ Develop features and functionality to better integrate Apple Wallet into iOS devices and the broader Apple ecosystem

Source: Flagship Advisory Partners

Will it Change the Game for In-Store Payments?

While Apple opening up access to NFC for in-store payments certainly creates new opportunities for stakeholders, it is unlikely to be a game changer for two core reasons;

1. **User experience:** Third-party wallets' user experience will at best be on par with Apple Pay, but likely still clunkier overall, which leaves little incentive for consumers to change their payment behavior. Additionally, Apple can still build in features in the remainder of its ecosystem to further differentiate Apple Wallet.
2. **Card-rails:** As the solution still will run on card-rails this does not solve the (arguably) sub-optimal in-store user experience for account-to-account-based payment apps (e.g. Twint, Blik, Bizum), other than leaving the option to issue cards in a digital wallet environment (which then defeats the fundamental purpose of account-based rails as an alternative to cards).

For competing card-based wallet providers, however, these are interesting developments as they will be able to distribute their solution to a broader audience, some of which have already started issuing cards (e.g. PayPal), while others will be incentivized to do so (e.g. MobilePay, Vipps). Issuers are also winners, given that they can convince their customer base to avoid using the Apple Wallet and instead use a competing wallet (in fact, some issuers like DNB, the largest bank in Norway, still have not purposely enabled Apple Pay

on their card portfolio) although for the vast majority of issuers, as they have already enabled Apple Pay, convincing customers to change behavior will be very difficult. In Figure 7 we summarize the impact and impact strength for select industry participants.

Figure 7: Impact on Industry Participants

PARTICIPANT	IMPACT	STRENGTH	RATIONALE
Issuers	+	MEDIUM	▪ Will be difficult to change behavior of customers who already use Apple Wallet without investment (which then decreases the cost savings from circumventing Apple)
Merchants	+	LOW	▪ Solves small/medium tech enablement issues, does not change underlying need to give customers a reason to pay via merchant apps, which merchants have struggled with historically
PSPs	○	LOW	▪ Little direct impact on PSPs as they are intermediaries
Wallet Apps (card-based)	+	HIGH	▪ Enables wallet apps to break free of Apple Wallet and control more of UX ▪ Significant cost saving opportunities
APMs (account-based)	○	LOW	▪ Fundamentally does not change much, as the technical changes at iOS devices (for now) applies to card rails ▪ Building out a card-based solution defeats the fundamental purpose of account-based alternatives to cards
Apple	−	HIGH	▪ Removes the lucrative position of controlling a walled garden around iOS device holders

+ Positive impact
○ Neutral impact
− Negative impact

Source: Flagship Advisory Partners
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Conclusion

Apple opening up NFC will not result in instant changes overnight and will not prevent Apple from developing features and functionality to better integrate Apple Wallet into iOS devices and the broader Apple ecosystem, providing ever-stronger incentives for users to use Apple Wallet. Competing card-based wallets are undoubtedly the winners of Apple opening up, but cannot simply piggyback on iOS devices to win market share. Growth and success will depend on the ability to build a seamless customer experience at the physical point-of sale (UX being the holy grail of mobile payments), in addition to changing consumer habits - a tough nut to crack.

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