4 June 2021

Parliamentary Joint Committee on Corporations and Financial Services - Mobile Payment and Digital Wallet Financial Services Inquiry

Apple Pty Limited

A. Summary

1. Apple welcomes the opportunity to provide the following submission to the Joint Committee in response to the Inquiry. Apple offers this submission in its capacity as the operator of Apple Pay and as a merchant in Australia. Australia has always been an important market for Apple and we are committed to enriching the lives of Australians through powerful and intuitive products and services. Apple Pay was built on the principles of security, privacy, and ease of use.

2. Apple does not issue credit, debit or prepaid cards, and does not process, authorise or execute transactions. Apple is not a bank, financial institution or payment service provider. Rather, Apple has partnered with banks and other financial institutions to enable them to securely store payment credentials on Apple devices which their customers use to make payments. Apple does not provide financial services or payment services - Apple's only role has been to develop the technical architecture that can be used by licensed financial institutions to offer their consumers a safer and more secure way to pay with their credit, debit or prepaid cards.

3. Apple Pay is an example of the dynamic competition and innovation that characterises the payments markets globally and in Australia. Consumers in Australia have access to a large variety of solutions, including cash, cards or credit transfers, and can use Chip & PIN cards, contactless cards, NFC, Bluetooth and QR Code technology. Apple does not restrict its partners from developing their own iOS apps, nor from supporting mobile payments or alternative presentment methods on other platforms. Indeed, every major Australian bank has an iOS mobile banking app (which are in the top listings in the finance apps on the App Store for iPhone and iPad). Banks in Australia are able to initiate an NFC payment or read data via NFC directly from their iOS apps, and/or to leverage alternative technologies for making mobile payments. Globally there are a number of other mobile payments apps and wallets on the iOS platform, including PayPal, Alipay, WeChat Pay and Beem It. Many banks offer Apple Pay in addition to their own mobile payment solution.

4. New players are emerging regularly in payments, offering innovation and increased consumer choice to the already wide range of traditional and innovative payment methods available to Australian consumers. Despite the advances made by new payment methods, card transactions from incumbent banks continue to dominate the payments market.

5. Apple believes that Australia's existing regulatory framework is encouraging and fostering innovative developments that offer competition to incumbent banks, while minimising the risks that arise from developments in technology and broader structural changes to the economy driving new forms of payments.

6. It is important that any reform to Australia's payment system regulations should place end-users at the heart of regulatory design, and should not undermine innovation or result in solutions that are less secure or less private for consumers. Such reform should not undermine competition

by dictating a technical approach to technology or reducing the competition or the degree of differentiation between players. Apple believes policies or regulations that seek to prescribe or dictate a technical approach are unnecessary and create severe unintended consequences, including compromising the security of the payments systems and stifling innovation that benefits customers, banks, and the broader payments industry.

7. Apple would be happy to provide further information in response to the matters discussed in this submission, and other issues relevant to the Joint Committee's Inquiry.

B. Mobile and digital payments in Australia

8. Australia has always been a key market for Apple and is one of the first markets in which we launched Apple Pay. This is due in part to Australia's market conditions, which promote competition and innovation. This is especially evident in Australia's payments landscape, which is rich and diverse. Just in the nearly 5 years since Apple Pay launched in Australia, there has been rapid growth in the mobile payment and contactless presentment options available to Australian consumers. These include:

- Technologies available to banks to enable mobile payments and can be used for NFC payments e.g., Apple Pay, Google Pay and Samsung Pay;
- Wearables that enable NFC payments, including Bankwest Halo ring and Westpac PayWear;
- Alipay and WeChat Pay, the two largest Chinese digital wallets that use QR codes rather than NFC, are now widely accepted at point of sale in Australia;
- A real-time payments application called 'Beem It' was launched by a consortium of banks in Australia in May 2018. Beem It is a digital wallet which allows people to instantly pay, receive and split payments by linking to their debit cards. Since it was launched, it has been reported that there have been more than 1 million Beem It downloads;
- New ways for customers to make purchases in store or online using their mobile phone, such as Buy Now Pay Later applications including Afterpay, Klarna, Zip Pay, and many others; and
- Virtual cards enabling new digital propositions created by providers such as Groupee (https://groupee.com), Money Me (https://www.moneyme.com.au/freestyle/apple-pay).

9. The foregoing innovations are layered on top of a rich environment of mobile banking apps for iOS, Android, and other mobile operating systems as well as the widespread use of NFC-enabled credit, debit and prepaid cards. We believe that the number of participants in the mobile contactless and e-commerce payments sectors in Australia will continue to increase in the future.

10. Apple does not restrict its partners from developing their own iOS apps, nor from supporting mobile payments or alternative presentment methods on other platforms. Indeed, every major Australian bank has an iOS mobile banking app (which are in the top listings in the finance apps on the App Store for iPhone and iPad). Globally there are a number of other mobile payments apps and wallets on the iOS platform, including PayPal, Afterpay, Alipay, WeChat Pay, Starbucks, Walmart Pay, and Square. Many banks offer Apple Pay in addition to their own mobile payment solution.

11. When we designed Apple Pay, it was important to Apple that we be capable of supporting all of our customers, regardless of who they bank with. Accordingly, we designed Apple Pay as a platform open to all card issuers and payment schemes/networks. Apple Pay supports more than 100 banks and card issuers in Australia, including many small banks, new entrant banks, and FinTechs. Apple has also invested significantly to enable cards from the EFTPOS Australia payment network on the Apple Pay platform.

12. As set forth later in this submission, Apple Pay has been designed to provide banks with a service that enables them to offer their payment propositions to their customers on Apple devices. Their customers benefit from unsurpassed security (e.g., transactions authenticated by biometrics), privacy (e.g., Apple does not see any of the NFC transaction data), and ease of use (e.g., customers can easily switch between cards from different issuers). Contrary to what some banks say, Apple does not 'restrict' or 'limit' banks from making NFC payments with their mobile banking applications. Instead, Apple has developed a highly innovative and secure architecture for NFC that is open to players in the payments ecosystem, and has helped FinTech start-ups and domestic payment schemes to compete with more established rivals.

13. In addition, Apple has enabled banks to initiate NFC payments directly from their iOS apps. This allows banks/card issuers to offer highly differentiated services and a good example of this is Afterpay's iOS app. Apple achieved this by designing a unique and differentiated technical architecture that allows banks to directly initiate NFC payments from their apps without compromising the user experience for consumers who wish to switch between cards from different banks/card issuers.

C. What Apple Pay is and how Apple Pay works

14. Apple does not issue credit, debit or prepaid cards. Apple also does not acquire, process, authorise or execute transactions. Apple is neither an issuer nor an acquirer for the purposes of the regulated payments system.

15. Rather, Apple Pay enables consumers to use their existing debit, credit or prepaid cards to make payments from Apple devices in an easy, safe, secure and private way. It is a way for a card issuer to create a payment credential linked to a consumer's credit, debit or prepaid card, and store that credential on the consumer's Apple Pay compatible Apple device to enable card payments to be made from that device. This credential issued by the customer's bank is also known as a digital account number (DPAN) or payment **Token**. Apple's application programming interfaces (**API**s) and technical architecture provide card issuers with industry leading security and fraud prevention tools whilst ensuring that: a) consumers can easily use the card issuer's products or services; and b) consumers' transactional data remains private.

16. Apple Pay is open to any financial institutions appropriately licenced in the relevant jurisdiction that issue payment cards (debit, credit or prepaid cards) to their own customers, offering such institutions the opportunity to enable their customers to make card payments from an Apple device. Apple is open to negotiating agreements with any institution that wishes to offer Apple Pay to its customers, from large traditional banks to FinTech start-ups.

17. Apple does not itself provide financial services or payment services. The credit, debit and prepaid cards used with Apple Pay are issued and operated entirely by licensed financial institutions (i.e., banks, payment services providers and e-money institutions) that choose to use Apple APIs and technical architecture. The original branding of the card issuer is always visible to a consumer making a payment transaction and all payment transactions are made from the cardholder's bank account associated with the credit, debit or prepaid card. The cardholder relationship is owned solely and exclusively by the relevant card issuer and not by Apple. As such, Apple does not issue cards nor does Apple hold, manage or access customer accounts. All transactions are processed using the existing payment infrastructure operated by banks, acquirers and their payment network operators.

18. To enable a card for secure contactless and e-commerce payments on Apple devices, a consumer needs to first send a request to the card issuer to approve use of their credit, debit or prepaid card with the Apple Pay technology. The consumer initiates the request by entering their card details on their Apple device or in the card issuer's iOS app (if the card issuer has enabled this functionality) and accepting the card issuer's terms and conditions. Each request must be approved by the relevant card issuer after verifying the consumer using the card

issuer's identity verification (**ID&V**) methods. Ultimately, the card issuer determines in its sole discretion whether a cardholder's request to use the issuer's card on Apple Pay is permitted.

19. After completing ID&V, the card issuer (or its tokenisation service provider) creates a payment Token linked to the card, and stores that payment Token on a secure chip on the user's Apple device. A digital version of the card which corresponds to the physical card is added to the Apple device for the cardholder to manage and use to initiate payments.

20. Once the card issuer approves the consumer's request, a digital version of the credit, debit or prepaid card with branding and trademarks provided by the card issuer is added to the Apple device for the consumer to manage and use. All payments will be made using the payment Token as a proxy for the consumer's Primary Account Number (**PAN**) or International Bank Account Number (**IBAN**). No cards or payment details are visible to or retained by Apple.

21. To make a payment, the consumer selects the virtual card issued by the card issuer (and which corresponds to the physical card) to pay with, and uses Touch ID, Face ID or their device passcode to authorise the payment to proceed. The device will then transmit the payment Token and a one-time transaction specific code generated by the payment applet to the merchant and its acquirer to process the transaction. No actual card details are provided to the merchant. The payment data is submitted to the card issuer (or its tokenisation service provider) to verify the transaction specific code and match the payment Token to the true card number. From that point, the transaction proceeds in the same way as a normal card transaction and the card issuer can authorise or decline the transaction.

22. Apple does not have access to a consumer's account to determine whether funds are available. It does not enter into receipt of funds at any point and has no role in the processing or execution of the payment transaction. Apple's only role has been to develop the technical architecture that can be used by licensed financial institutions to offer their consumers a safer and more secure way to pay with their cards.

D. Nature of commercial relationships and participants within the Apple Pay ecosystem

23. All transactions follow a four-party or three-party scheme depending on the payment schemes involved. Since the technical architecture for Apple Pay utilises tokenisation technologies (please see description above), a payment Token (created and issued by the card issuer) is used in place of PAN or IBAN as a payment credential when a consumer makes a payment. The relationship between the various participants in the Apple Pay ecosystem are described below.

    a. **Card issuer:** The card issuer (i.e., the customer's bank or e-money provider) issues the payment instrument (such as a credit, debit or prepaid card) to its customers. The card issuer is also responsible for creating and issuing the payment Token linked to the payment instrument, and storing the payment Token on the Apple device (although most card issuers delegate this role to their third party tokenisation service providers). The card issuer determines the terms of use of the payment instrument (i.e., it enters into a contract with its customer for use of the credit, debit, or prepaid card or payment Token linked to the card). The card issuer also determines the applications or brands included on its cards. It determines the trademarks and card art that appear on the image of its card in the customer's digital **Wallet**. It is responsible for verifying and approving (or declining) payment transactions made with the payment Token. In other words, the card issuer has a contractual relationship with the payer for use of the cards it issues, it makes cards (including payment Tokens linked to those cards) available to the payer, authorises transactions and may guarantee payment to the card scheme for transactions that conform with the rules of the relevant payment scheme.

    b. **Apple:** As discussed above, Apple's only role has been to develop and make available a technical architecture that can be used by card issuers to offer their customers a safer and

more secure way to pay with cards issued by those card issuers. Apple does not have access to a consumer's account to determine whether funds are available. It does not enter into receipt of funds at any point and has no role in the processing or execution of the payment transaction.

c. **Consumer / Payer:** The consumer has a payment account with the card issuer and contracts with the card issuer to use a credit, debit or prepaid card from the card issuer on the Apple device. The consumer sets up Apple Pay by requesting the card issuer to add a payment Token to the iPhone, iPad, Apple Watch or MacBook. Once the card has been added to the device, the consumer can make payments by selecting a digital version of the card to pay with, and authorising the payment using biometrics or passcode. The consumer uses Wallet to manage different cards and passes on the device, for example to select or switch cards when paying or to choose a default card.

d. **Retailer / Payee:** The retailer initiates the payment by transmitting the payment information comprising the Token (in place of the actual card number) together with a one-time transaction specific code to the card issuer or the card issuer's tokenisation service provider. This is exactly the same way in which retailers initiate POS or e-commerce transactions using physical cards, save for the substitution of the Token for the card number.

e. **Payment scheme:** The payment scheme operates a card payment system in which it grants licences to issuing and acquiring payment service providers. Four-party payment schemes like MasterCard and Visa do not undertake their own issuing or acquiring, while American Express operates both as a three-party card payment system in which it undertakes its own issuing and acquiring and as a four-party system in which other financial institutions are licensed to issue cards and acquire transactions.

f. **Tokenisation Service Provider (TSP):** Each card issuer is responsible for tokenising its cards and enters into relevant agreements with any third parties it engages to provide tokenisation services on its behalf. A card issuer can use its own tokenisation services or obtain tokenisation services from a third party provider. Tokenisation services are available from certified third parties and include tokenisation platforms from international payment schemes such as Visa, MasterCard and American Express, domestic payment schemes such as EFTPOS, or service providers such as IDEMIA and Thales. In Australia, Visa and MasterCard provide tokenisation services to card issuers through the Visa Tokenisation Service (or VTS) and MasterCard Digital Enablement Service (or MDES). Apple has a separate contract with TSPs to enable them to connect to Apple systems.

24. An overview of the participants in the value chains for card and mobile payment services is provided at **Annexure A**.

E. Competition and consumer protection benefits of Apple Pay

25. Apple carefully chose a unique technical architecture, commercial model and user experience for Apple Pay that facilitates consumer choice. Apple Pay helps create broader digital engagement with consumers and their banks.

26. The Apple Pay architecture is available to any card issuer that can meet the technical and commercial requirements for Apple Pay. Card issuers have equal access to this architecture: all card issuers pay the same fees and are subject to the same terms and conditions in their territory regardless of size and each card issuer is presented equally in the user experience. Consumers can easily switch between cards issued by different card issuers and it is very clear what card they are paying with at any time. The consumer is always in control of the default settings and which cards are enabled on their devices. Innovation is supported as third party apps can directly initiate contactless payments without having to pass sole control of the near

field communication (**NFC**) architecture[1] to a single bank app. Card issuers can also utilise Apple's APIs to make their iOS apps fully integrated with the payment experience and create differentiating experiences for their customers. FinTechs such as Afterpay and Klarna have been quicker than traditional incumbent banks to adopt these APIs to offer a superior experience to their customers.

27. Apple designed an architecture that can be used by third parties to offer a broad range of contactless solutions on Apple devices. For example, card issuers can use Apple technology to facilitate contactless payments for their customers. Moreover, the Apple Pay platform provides several capabilities beyond payments that the banks can use to drive more mobile banking downloads, increase mobile banking usage by deep linking into their own apps and reduce service calls by messaging customers more proactively through front of pass messaging and notifications capabilities.

28. The same architecture supports contactless transactions for other industries, such as car manufacturers, universities, and transport operators, enabling consumers to use their iPhone or Apple Watch to unlock a car, access locations on campus or tap through a transit gate, and more. No individual developer or bank has exclusive control of the NFC capabilities of the device enabling non-bank providers (including future applications such as government ID cards and passports) to use NFC technology with the simplicity and ease of use available on Apple devices that preserves security while facilitating competition to grow these services.

29. This means all developers, no matter how big or small, have access to the capabilities of Apple devices on an equal basis, and consumers can switch easily between services and providers, stimulating both innovation and competition. Changing this open approach to give control of NFC capabilities to individual banks would compromise the customer experience on Apple devices, reduce security and privacy, undermine choice and harm competition. Finally, any attempt to force Apple to adopt the strategy of Google's Android mobile operating system, Apple's most significant competitor in mobile operating systems, would negatively impact Australian consumers, as the ACCC noted in its extensive investigation into Apple's NFC policy.[2]

30. Equally, Apple believes that policies or regulations that seek to prescribe or dictate a technical approach are unnecessary and create severe unintended consequences, including compromising the security of the payments systems and stifling innovation that benefits customers, banks, and the broader payments industry.

31. In sum, Apple's current architecture facilitates innovation, competition and customer choice, without having to compromise security and privacy.

F. Innovation that has occurred with Apple Pay

32. Developments in technology and broader structural changes to the economy are driving new forms of payments that better serve the needs of end-users – whether they are consumers, businesses, governments, or community groups. Apple believes that Australia's regulatory architecture should, and is, encouraging and fostering innovative developments while minimising the risks that arise from these changes.

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[1] NFC is a set of technology standards and protocols for controller communications over a short distance, typically 4cm or less. NFC technology is already widely used to make contactless payments through payment cards in Australia: ACCC, *Determination - Applications for authorisation A91546 & A91547 lodged by Bendigo and Adelaide Bank Limited & Ors* (31 March 2017), [36].

[2] Ibid, [342]: "*The ACCC is therefore concerned that NFC access is likely to result in a significant public detriment from distorting competition between mobile operating systems because, if Applicants were successful in securing NFC access, this is likely not only to lessen the degree of Apple's differentiation from the Android platform but also to alter the consumer experience offered by Apple's competitively differentiated iOS platform*".

33. Australia's regulatory architecture has supported a number of innovative reforms in recent years that have delivered significant benefits to end-users.[3] For example, non-prescriptive, principles-based regulations that support innovation have allowed Australian consumers to access a large variety of solutions, including cash, cards or credit transfers, Chip & PIN cards, contactless cards, NFC, Bluetooth and QR Code technology. This framework has supported the introduction of innovative solutions like Apple Pay, providing unparalleled security and privacy for consumers.

34. Apple Pay developed a hardware-based architecture that uses security features built into Apple devices to help protect transactions, consumers' personal information and sensitive payment data from information leakage and malicious attacks. Apple Pay does not collect any transaction information that can be tied back to the user. Payment transactions are between the user, the merchant and the card issuer. Consumers use Face ID, Touch ID or their passcode to authorise payments via on-device only processing. Full card numbers are not stored on the consumer's device or on Apple Pay servers. Instead, a unique Device Account Number (or Token) is created, encrypted, and then stored in the Secure Element. This unique Device Account Number is encrypted in such a way that Apple cannot access it.

35. Since being launched in September 2014, Apple has continued to bring ground-breaking innovations to the payments ecosystem, while raising the bar for security, privacy and customer experience. Apple has focussed on enhancing the relationship users have with their card issuers by developing services that increase utility and usage of mobile banking apps. This includes the ability to set up Apple Pay from the card issuer's mobile banking app, the ability to make NFC payments from within the card issuer's mobile banking app, and instant issuance, enabling digital banks to issue virtual cards and immediately enable their consumers to use these cards to make secure contactless and e-commerce transactions on Apple devices. Apple has also added support for newer emerging payments like Buy Now Pay Later, and POS instalments more generally.

36. Apple Pay supports multiple cards in Wallet providing a great user experience for consumers that have several credit, debit or prepaid cards from multiple issuers. The user interface in Wallet makes it very easy for consumers to select any card of their preference at the point of purchase. Coupled with instant issuance and support for FinTechs, Apple Pay has created a level playing field for payment providers of all types and increased competition.

37. In addition, Apple invested significant resources in enabling the EFTPOS network on the Apple Pay platform in 2017, including a) developing unique Wallet functionality that enables consumers to easily choose between payment schemes (e.g., to route a transaction over Visa or EFTPOS) for each transaction and b) enabling an applet to enable the use of EFTPOS within Apple Pay. Apple feels it is important to provide consumers with the same choice of card scheme that is available on debit cards today on their Apple devices using NFC.

38. The inclusion of EFTPOS in Apple Pay has led to increased competition between card schemes and provided EFTPOS with the critical technology and platform capabilities to expand its presence in contactless mobile payments. The customer value propositions offered by these card networks have points of differentiation including functionality such as the ability to withdraw cash at point-of-sale.

39. In addition, some merchants may surcharge differently for EFTPOS compared with Visa/MasterCard due to variable costs between debit networks. When a customer makes a contactless ('tap-and-go') payment, the merchant may choose to send the transaction via the debit network that costs them the least to accept (**least-cost routing** or **merchant routing**). If a merchant uses least-cost routing, it should not affect which deposit account the funds are paid from.

[3] See Treasury, *Payment Systems Review - Issues paper* (November 2020) https://treasury.gov.au/sites/default/files/2020-11/c2020-129951-issues-paper.pdf

40. As the Reserve Bank of Australia has observed:[4]

> *Least-cost routing lowers payment costs by: (1) giving merchants the ability to route dual-network debit card transactions to the lowest-cost network; and (2) increasing the competitive pressure between the debit card payment schemes such that there is greater incentive for all schemes to lower the fees – interchange fees and scheme fees – that they set on debit card transactions. These fees are a key component of the price that merchants pay to accept card payments.*

41. A number of recent Government reports have also called for banks and payment providers to provide merchants with least-cost routing.[5]

42. Apple Pay does not restrict in any way least-cost routing by merchants. The Apple Pay platform presents a payment credential to the terminal at point of sale; it has no involvement in nor does it restrict the routing of the transaction by a merchant. As such, there are no "technological limitations" or "settings" imposed by Apple Pay which prevent the operation of least-cost routing by a merchant.[6]

43. Apple's focus has been on bringing innovation to payments while providing Apple technology on a non-discriminatory basis.

G. Reduced fraud

44. Applying Apple's broader strategy of leveraging the integrated hardware and software features of our devices to Apple Pay enables Apple to offer industry-leading security whilst making the service very easy for consumers to adopt and use. Apple Pay provides consumers, merchants, and banks with unsurpassed security and privacy through the following:

- Every transaction requires authentication through Face ID, Touch ID or the user's passcode;
- The consumer's credit, debit or prepaid card is tokenised so that a unique surrogate card number (i.e., Token) is then stored on a secure element embedded within the Apple device;
- Apple does not collect any transaction information that can be tied back to a user, nor does Apple have the ability to access the Token stored on Apple devices; and
- At the time of transaction, the Apple device transmits both the Token and a single use "dynamic cryptogram" that is unique to each transaction and validated by the payment network.

45. The unsurpassed level of security provided by Apple Pay allows cardholders, issuers, schemes, retailers, and the payments ecosystem as a whole to obtain the largest possible benefit from the introduction of mobile payments; namely, a substantial reduction in fraud by only using device- specific tokens that require customer authentication in every instance. This also allows Apple Pay to reduce the risk of consumer harm by allowing consumers to transact and effect mobile payments without passing sensitive personal financial information (such as their account numbers, names, or billing addresses) to each and every merchant they transact with. Because each Token is device-specific and cannot be used without the cryptogram associated with that device, consumers are not placed at any risk of loss in the event their Token is exposed as a result of a subsequent security breach at the merchant.

46. Additionally, Apple believes that its approach to privacy is a particular benefit to consumers and banks. In offering Apple Pay, Apple does not retain transaction data or sensitive financial data

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[4] RBA, *Least-cost Routing of Debit Card Transactions* https://www.rba.gov.au/payments-and-infrastructure/debit-cards/least-cost-routing.html

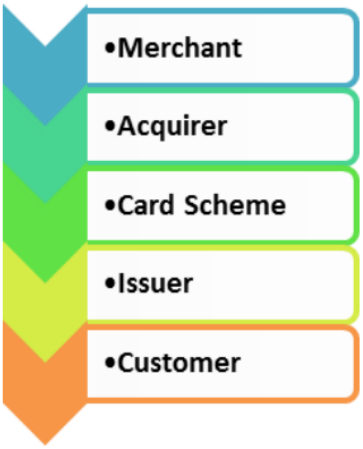
[5] These include the House of Representatives Standing Committee on Economics Third Report on the Review of the Four Major Banks, the Productivity Commission Draft Report on Competition in the Australian Financial System, and the Black Economy Task Force Final Report.

[6] Cf Australian Retailers Association, Submission to the Joint Committee, 19 May 2021.

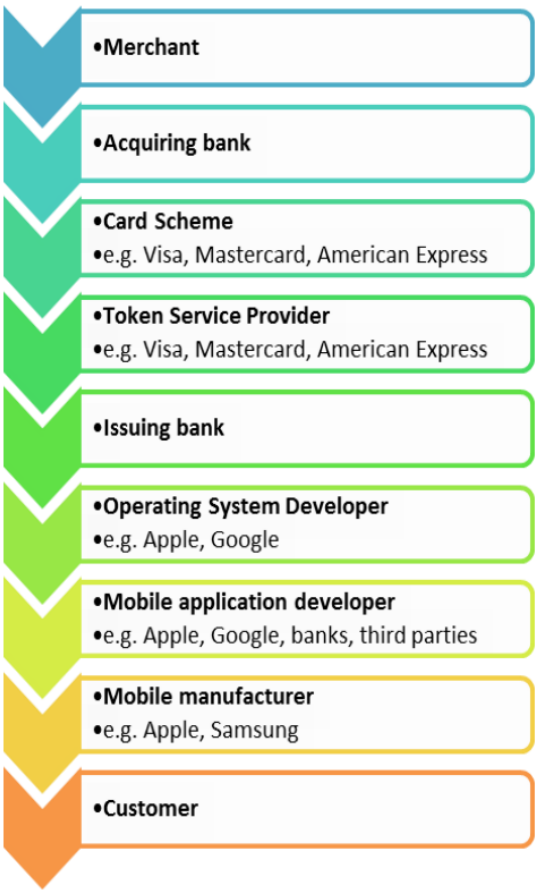
(such as the account number of provisioned cards) of Apple Pay users. Unlike other mobile payment providers, Apple believes that using Apple Pay does not require users to sacrifice privacy for the sake of security — they can have both in equal measure. Banks know that Apple is not storing and/or monetising their data.

47. The high level of security associated with the Apple Pay platform has been recognised by the Australian payments industry. For example, Apple Pay transactions are exempt from the strong customer authentication requirements of the Australian Payments Network's Card-Not-Present Fraud Mitigation Framework which was implemented in 2019.

Annexure A - Overview of participants in the value chain for card and mobile payment services



Card payment services



Mobile payment services

Source: ACCC, *Determination - Applications for authorisation A91546 & A91547 lodged by Bendigo and Adelaide Bank Limited & Ors* (31 March 2017), [49].