New Zealand Commerce Commission
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To Whom It May Concern

Consultation on costs to businesses and consumers of card payments in Aotearoa New Zealand

Apple welcomes the opportunity to provide this submission to the consultation paper published by the New Zealand Commerce Commission (**NZCC**) dated July 23, 2024 on costs to business and consumers of card payments in New Zealand (**Consultation Paper**), particularly in relation to the matters raised regarding digital wallets.

A. Executive summary

1. Apple is a technology company that designs, manufactures and markets smartphones, personal computers, tablets, wearables and accessories, and offers a variety of related services. Apple is constantly innovating and investing to enrich the lives of its users. Apple Pay is one such innovation which allows users to add digital versions of their existing payment cards into their Apple devices to make easy, private and secure transactions. To create Apple Pay, Apple invested significant resources to develop a unique technical architecture: one that protects rather than monetises personal information, provides users with an easy way to select the card of their choice even when they have cards issued by competing banks, provides banks with equal and non-discriminatory access, and most importantly, offers the highest level of security.

2. Apple is deeply committed to promoting competition. Traditionally, only large banks had the means to develop a digital payment option. Apple Pay provides all banks with access to market leading technology on a level playing field basis, significantly reducing the barrier of entry to digital payments. Apple Pay does not favour or provide preferential treatment to any card issuer. All cards and payment credentials receive equal access to the same interface on Apple devices and the same Apple Wallet technology. All card issuers pay the same fees irrespective of their size. This allows smaller banks and fintechs to compete on a level footing with larger incumbent banks. Apple is proud that this pro-competitive technical architecture has ultimately reduced costs for all participants in the payments ecosystem.

3. In its simplest form, Apple Wallet is a digital representation of a physical wallet, but made more efficient, seamless and secure. Apple Wallet is ultimately just a place to store a wide range of existing cards and credentials – it does not itself perform any payment function. Nevertheless, as the Consultation Paper seeks feedback on digital wallets, Apple is providing this submission to highlight the following:

    (a) Apple has a commercial model for Apple Pay to reflect: i) the investments Apple has made to develop the Apple Pay architecture; ii) the ongoing investments Apple makes to continually innovate on behalf of participating card issuers and promote Apple Pay to users and merchants; and iii) the significant benefits enjoyed by issuers using Apple Pay. Under this model, issuers are charged reasonable fees only when Apple Pay is used. In consideration of these fees, issuers benefit from avoiding the high fixed cost overhead for the provision of digital payments, cost

savings associated with substantial reductions in fraud, and expanded opportunities to engage with their cardholders to cross-sell their services. Apple does not charge payment networks, merchants or users for use of Apple Pay.

(b) The highly competitive and dynamic payment landscape that Apple Pay operates within imposes real and substantial constraints on the fees Apple charges for Apple Pay. Apple Pay represents just one of many interchangeable physical and digital payment solutions that consumers and merchants can access. Apple Pay only exists while issuers choose to participate. Issuers provide their users with a range of payment options and they have significant leverage should they choose to exit their agreement with Apple.

(c) Apple Pay already provides equal, open and secure access to third parties though Apple Pay's unique technical architecture, which is built around the Secure Element (a physical chip on Apple devices which stores payment credentials) and Near-Field-Communication (**NFC**) controller (which routes communications between an NFC reader to the Secure Element). Any issuer which meets Apple's technical and commercial requirements can participate on Apple Pay. Globally, over 11,000 issuers currently participate on Apple Pay.

(d) The Apple Pay architecture only allows for payments to be made using the Secure Element. Mandating a different architecture for third party access (e.g. the "Host Card Emulation" (**HCE**) model developed by Google) to Apple's payment infrastructure exposes users to significant security and privacy risks without any corresponding consumer benefit. Apple differentiates itself from its largest competitors in the mobile phone market on ease of use, security and privacy, and the approach taken for payments is a cornerstone of this competitive strategy.

(e) Starting with iOS 18.1, issuers will be able to securely offer NFC contactless transactions using the Secure Element from within their own iPhone apps, without having to use Apple Pay or Apple Wallet (**NFC & SE Platform**). This gives issuers another way to access Apple technology to facilitate contactless transactions.

B. Apple Pay fees are reasonable and card issuers benefit from cost savings from using Apple Pay

4. The technical infrastructure that facilitates digital payments via Apple Pay comprises proprietary hardware and software that was developed and is maintained by Apple at significant cost. Apple does not recoup those costs by charging transaction or other fees to end users, payment networks or merchants for use of Apple Pay. Apple does, however, charge reasonable fees to card issuers who wish to benefit from Apple Pay technology and make available to their cardholders digital representations of their physical cards in Apple Wallet that can be used to make secure payments. In return, issuers derive significant cost savings through reduced fraud, managing less plastic cards, increased use of low cost digital servicing channels, increased revenue from higher transaction volume, new channels to communicate with customers and additional cross-sell opportunities.

5. Apple's investment in improved technology by card issuers is of a similar character to card issuers' wider technology investment, intended to improve systems and innovations in their online presence, banking applications, presentment methods, security improvements, data protection and customer relationships. Just like cloud services providers, security services providers or any other enterprise technology providers to issuers, Apple charges reasonable fees in return for providing technology for issuers wishing to offer better services to their customers. Issuers participating on Apple Pay benefit from the costs savings of not having to invest in and provide this technology themselves.

6. Rather than advantaging only the largest financial institutions with the means to invest in research and development, the commercial model of Apple Pay means even the smallest and newest card issuers (including those without a banking app) can offer a mobile payment proposition to their users, reducing their costs (which may otherwise have been passed on to merchants and cardholders) and promoting competition via an equal playing field.

7. Apple charges fees to card issuers only based on the terms of the agreements Apple has with each participating card issuer. These fees are not directly linked to interchange or scheme fees. Rather, these fees are in consideration for:

   (a) the enhanced security provided by Apple Pay on transactions (i.e. on-device authentication through Face ID, Touch ID or the user's passcode), and the significant reduction in fraud and associated compliance costs;

   (b) information provided by Apple to the issuer to determine the user's eligibility to enable Apple Pay and to prevent fraud;

   (c) the increase in transaction volume for issuers derived from the ease and security of using Apple Pay;

   (d) increased capital for issuers to fund lending and reductions in operational costs due to cash withdrawals, as a result of the increase in user account balances when users use cards instead of withdrawing cash;

   (e) the additional channel through which issuers can communicate, interact with, and ultimately seek to retain their cardholders;

   (f) the investments Apple has made and continues to make to develop and maintain hardware and software components to support Apple Pay, including to ensure uptime of Apple servers (which securely provision and retrieve credentials on Apple devices) and maintain connectivity of features that support e-commerce transactions;

   (g) the investments Apple has made and continues to make to innovate around digital payments and to support alternative payment networks;

   (h) the time and expense incurred by Apple to expand merchant acceptance of Apple Pay, particularly in the context of e-commerce merchants accepting secure online payments; and

   (i) the time and expense incurred by Apple to build consumer awareness of Apple Pay.

8. The fees Apple charges to card issuers are usage based. This ensures that Apple only charges fees where Apple Pay is used by the issuer's customers which reduces risk for issuers, thereby increasing innovation in the market and ensuring that issuers only pay when they have directly benefited from the use of Apple's technology.

9. Additionally, Apple does not charge any fees to network operators, merchants, developers or users for the use of Apple Pay. This means that both merchants and users can enjoy reduced fraud, higher security, and a seamless payment experience (including increased conversion rates for merchants) all without incurring any incremental cost.

10. With Apple Pay, Apple offers a clear alternative to other technology companies whose propositions rely on advertising and the monetisation of data. Apple Pay proves it is possible to provide a secure, easy-to-use payment solution without the need to collect and monetise data about what users are purchasing. Consistently with Apple's core values on data security and customer privacy, Apple does not collect any personally identifiable transaction information when Apple Pay is used – Apple does not know what the user's original card numbers are, what they bought on Apple Pay, or any other transaction data. With Apple Pay, the customer is not Apple's product.

11. Apple Pay also facilitates increased competition between card issuers because users can easily switch between cards issued by different banks and benefit from having full transparency over what card they are paying with at any time. The user (and not any one particular bank e.g. an incumbent bank with dominant market power) is always in control of the default settings and which cards are enabled on their devices. As the UK Treasury's Future of Payments Review 2023 concluded, digital wallets such as Apple Pay have "innovated and

further improved the consumer cards experience" to "deliver value to merchants and consumers [and] contribute positively to the payments landscape".

C. There are significant competitive constraints on Apple Pay fees

12. Apple has never raised the fees it charges to card issuers for Apple Pay either in New Zealand or globally since Apple Pay was first introduced in 2014, nor does Apple have any plans for doing so. Any attempt by Apple to increase the fees for Apple Pay would be restricted by:

    (a) Market constraints: Apple Pay operates in a highly competitive and dynamic environment, where it is one of many digital wallet applications alongside other competing payment options using a range of different technologies and providers. Apple Pay is not a "must take" presentment method as consumers and merchants have no shortage of contactless payment options outside of Apple Pay, including physical cards, QR code-based mobile payment solutions, HCE solutions on Android and other devices. This high substitutability restrains the level of Apple Pay fees – if these are too high, then issuers would choose not to offer Apple Pay knowing that their cardholders would continue to be able to make payments through other easily accessible means.

    (b) Contractual obligations: to support a participating bank's offering of Apple Pay, Apple enters into a bilateral contract with that bank which contains the same key terms and conditions for every other participating bank, including in relation to fees. Apple does not have any contractual ability to unilaterally increase fees. Since a fundamental proposition of Apple Pay is that each bank is subject to the same commercial model, Apple would be unable to raise its fees unless every bank on the Apple Pay platform agreed to the fee increase. This contrasts with the fee schedules issued under scheme rules, which can be changed at any time at the discretion of the payment network, particularly with respect to network fees (as distinct from interchange fees).

    (c) Reputational impacts: Apple has been clear to its card issuing partners to date that it has no intention of raising its fees for Apple Pay. Departing from this would jeopardise the extensive relationships Apple has worked hard to build with its partners.

D. Apple Pay provides open and secure access to third parties

13. The Consultation Paper suggests "allowing third-party mobile wallets and payment providers access" to mobile wallets such as Apple Pay. Apple already provides access to the NFC functionality on Apple devices using Apple Pay to any third party that meets the technical and commercial requirements for Apple Pay. Each participating card issuer accesses Apple Pay on equal, non-discriminatory terms, so that all card issuers – regardless of their size or market power – pay the same fees to Apple only when Apple Pay is used and are presented equally in the user experience. Apple Pay supports the broadest range of participants including traditional banks, fintechs and third party wallets, who are all able to initiate NFC payments directly from their iOS apps to provide differentiated and innovative payment experiences.

14. Apple Pay's contactless payments are built around the following elements which benefit users and act as a competitive point of difference for Apple as against alternative competing virtual presentment models: a Secure Element, an NFC controller, Secure Enclave, and Apple Pay Servers. In particular, the Secure Element is a tamper-resistant physical chip, incorporated in the device itself, which stores all relevant payment credentials (inside applets associated with the payment network of the applicable credential) and the encryption keys to protect the transaction data, while the NFC controller routes payment communications from the NFC reader directly to the Secure Element. For maximum privacy and security, the Apple Pay solution only allows for payments to be made using the Secure Element.

15. Apple has focused on three process flows to secure the payment credentials and the integrity of the Secure Element:

(a) First, the delivery of payment credentials comes directly from the payment provider and is loaded securely into the Secure Element. Apple servers act as the orchestrator of this operation and has built a solution so that no parties between the payment provider and the Secure Element can read the credentials and handle the applets inside which these credentials sit.

(b) Secondly, Apple has designed a tightly integrated link between the Secure Enclave and the Secure Element to manage the release of these credentials subject to the approval of the biometrics controls (Touch ID, Face ID) or a passcode.

(c) Thirdly, Apple protects the delivery of the payment credentials from the Secure Element to the payment terminal.

16. Apple announced on August 14, 2024, that starting with iOS 18.1, third parties around the world, including in New Zealand, would be able to offer NFC contactless payments on iPhone using the Secure Element without having to use Apple Pay or Apple Wallet. Card issuers, whether currently participating on the Apple Pay platform or not, will have the option of offering secure NFC payments from their iOS app outside of the Apple Pay agreements and user experience. To access the NFC & SE Platform, issuers will need to meet certain industry and regulatory requirements, commit to ongoing security and privacy standards, and enter into a commercial agreement with Apple.

17. To safeguard the security and privacy of this solution, Apple maintains responsibility for securely provisioning the issuer's payment applets into the Secure Element and securely retrieving provisioned credentials from the Secure Element. For malicious code to be introduced, it must have access to the Secure Element. Any such attack – whether on the Apple Pay or NFC & SE Platform – remains very difficult given the limited attack vector and the hardware features of the embedded Secure Element.

E. The security and privacy risks of enabling HCE access to NFC outweigh any potential benefit

18. As the Consultation Paper notes, Apple has offered certain commitments to the European Commission to enable HCE access to the NFC controller on Apple devices for certain use cases. The legislative framework in the EU differs to other jurisdictions, including New Zealand, in terms of the ability to impose commercial terms on companies for access to their intellectual property. These commitments are only available in the European Economic Area.

19. The embedded Secure Element approach used with Apple Pay offers best in class user privacy and security protections that Apple can stand behind. With a cloud-based approach like HCE, there is no dedicated chip and operating system which is cordoned off from the main processor and operating system of the device, so malicious code could be directly introduced into the device's primary system. Further, as the primary system must communicate with the cloud, from which it pulls the HCE payment data, this data can be intercepted as it crosses the internet, which can compromise the security of the overall device. Any benefits of a cloud-based approach are speculative; notably, despite longstanding availability of HCE on Android in New Zealand, there has yet to be a corresponding increase in pro-consumer innovations or competition on Android. In fact, today there does not appear to be any HCE based digital wallet in New Zealand.

20. In recognition of these risks, Apple invested significant time, effort and resources to develop the Secure Element model. Before Apple Pay launched in 2014, the Secure Element had not yet been introduced to the iPhone. The easy choice would have been to adopt HCE, so that Apple Pay would be immediately available to the almost half a billion active iPhones globally at the time. Instead, Apple used its unique ability to leverage hardware, software and services to design Apple Pay around a dedicated Secure Element.

21. Apple has continued to innovate and invested significant resources to design a Secure Element-based solution that will give even greater choice to card issuers to offer their users access to contactless payments on iPhone. As noted above, the NFC and SE Platform gives New Zealand issuers another way to use Apple technology to deliver the best possible customer experience within the most robust security architecture possible.