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Application for authorisation of limited collective negotiation in relation to mobile wallet and mobile payment systems

Response to interested party submissions

30 September 2016

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1 Introduction

Australian consumers are enthusiastic users of technology. They are well ahead of the rest of the world in embracing contactless payments and are enjoying the convenience and security these type of payments offer. Mobile wallets are the next logical step. However, competition and innovation in mobile wallets will not be possible if Apple's decision to deny competitors the ability to offer integrated mobile wallets on the iPhone is left unchallenged.

The applicants are therefore seeking to collectively negotiate with Apple to ensure Apple Pay is introduced into Australia in a way that promotes consumer choice, competition and innovation while maintaining the highest standards of security and allowing for transparency and fairness in fees.

Such collective negotiation is necessary in a context where Apple has the ability and incentive to lock competitors out of the iPhone's near-field communication (**NFC**) technology needed to make integrated mobile payments. Apple claims its lock-out is to make payments more secure – but Samsung and Google already provide access to this technology without detriment to security. The applicants therefore believe it is important to challenge Apple's claims in an effort to increase competition in mobile wallet payments and to benefit consumers.

The applicants also note that Australian card issuers and merchants have already invested heavily in the infrastructure needed to make mobile payments a success. In the United States (**US**), where this investment is yet to be made, the uptake of Apple Pay has been slow. In contrast, the uptake of integrated mobile wallets in Australia could be very fast. The applicants want to avoid a situation where Apple is allowed to free ride on this investment for its own benefit, while blocking others from competing with Apple Pay.

Finally, the applicants also want to ensure Apple Pay operates in an environment that maintains the levels of security and transparency that apply to other payment options. There is no doubt that mobile payments will be enthusiastically adopted by many Australians. However, consumers who do not want to use integrated wallets such as Apple Pay should not be exposed to the cost of inconsistent approaches to security or to hidden costs that benefit Apple but make payments more expensive for everybody else.

2 Executive summary

Authorisation will provide real public benefits

The authorisation sought will give the applicants the best chance to ensure that third-party mobile wallets such as Apple Pay are introduced into Australia in a way that promotes consumer choice, competition and innovation while maintaining the highest standards of security and allowing for transparency and fairness in fees.

The applicants are committed to providing their customers with a choice of mobile payment options, including Apple Pay. Australian card issuers and merchants have invested heavily in the infrastructure needed to make mobile payments a success – in particular the contactless payment network that has been embraced by retailers from the largest to the smallest and overwhelmingly by consumers.

Apple benefits enormously from its access to this established infrastructure, which is far more developed than in Apple's home market of the United States. However, Apple does not allow Australian iPhone users to access this infrastructure except through Apple Pay, denying them the benefits of competition and innovation in mobile payments. Apple seeks to determine every aspect of the security arrangements that apply to Apple Pay, although it is the issuers, and not Apple, who will be liable for any fraud. And Apple seeks to charge issuers for their customers' use of Apple Pay but to deny them the choice of passing through any of those costs, with the result that the cost of Apple Pay will be higher than it should be and will be borne by all of a bank's customers, whether they use Apple Pay or not.

The applicants seek authorisation to collectively negotiate in order to address these issues and ensure that consumers benefit from choice, competition, security, transparency and fairness. They welcome the support of a wide range of industry participants including card issuers, merchants, payments technology companies and industry bodies. They do not consider that the objections raised by or on behalf of Apple detract in any way from the net public benefits that authorisation will provide.

These public benefits cannot be achieved without the authorisation

Apple's submissions make clear that its positions on exclusivity, determining its own security standards and preventing transparency are firmly entrenched. Card issuers around the world, much bigger in size than any of the applicants, have tried to individually negotiate with Apple on these issues and have failed. It is unlikely that any issuer in Australia, negotiating individually, would succeed.

Apple has around a 40% share of the smartphone market in Australia and controls a critical segment of mobile phone users. It is clear that customers are far more likely to change cards in order to use Apple Pay than they are to give up their iPhones in order to use mobile payments, as demonstrated by the increase in card applications reported by ANZ Bank since it launched Apple Pay.

This results in a significant disparity in bargaining power between Apple and any Australian card issuer when it comes to negotiating the terms of Apple Pay, and these are precisely the circumstances in which collective negotiations are recognised to promote fairer and more efficient outcomes, and collective boycotts may be required to

bring a more powerful party to the negotiating table.

Apple has said that it will never negotiate in relation to these issues no matter who sits across that table. That is exactly what Apple would be expected to say. In fact, Apple has never publicly faced a collective negotiation on all of these issues before, and it is not possible to predict the results of such a negotiation. Apple has compromised on other aspects of Apple Pay before, including altering its position on security. It has opened up many hardware and software features to third-party developers over time. A growing number of card issuers and technology companies around the world are asking for access to the iPhone's contactless payment functionality and are taking their concerns to regulators as the applicants have done.

In these circumstances the applicants believe that there is a real chance that authorisation for collective negotiations will lead to improved outcomes for consumers. They are certain that without authorisation or collective negotiation there will be no chance of these public benefits.

Further, without the authorisation there will be significant public detriments

However, the inability of issuers to collectively negotiate with Apple would not only prevent the achievement of clear public benefits; it would also be likely to result in significant public detriments.

In particular, it would stifle innovation and investment in mobile wallet technology at a critical time. It would prevent many customers from using their preferred mobile wallets from the providers they trust most, and would result in customers paying more for payments regardless of whether they used Apple Pay or not. It would reduce the utility of the extensive contactless payment infrastructure that Australians have invested in over almost a decade.

Apple suggests that customer choice can be maintained through workarounds such as stickers and wristbands – which are nothing more than smaller contactless cards and have nothing to do with mobile phones – or by new payment infrastructure that would inefficiently duplicate and overbuild the infrastructure that is already there. These solutions have been tried around the world and have invariably led to expensive failures – and unnecessary failures, attempted only because Apple has denied its competitors access through the iPhone to existing technologies and the only contactless payment technology that has been successful.

Even if these efforts were to succeed, they would come at a higher cost than simply using the existing infrastructure – which Apple did not develop but wishes to control – and would lead to ongoing inefficiencies and fragmentation. These are all anti-competitive public detriments that would be very likely to arise if authorisation were not granted.

Authorisation is about choice and competition leading to better outcomes for Australian consumers, not about preventing Apple's entry into the

Apple suggests that the applicants wish to "blunt" or delay Apple Pay and its entry into Australia, and to slow innovation and reduce competition. This is exactly backwards. The applicants are under intense pressure to participate in Apple Pay, and risk losing customers to other issuers who offer Apple Pay before them. They wish to commence and conclude collective negotiations and offer Apple Pay to their customers as quickly as possible.

Australian market

However, it is clear that the applicants have a very limited opportunity to influence the conditions on which Apple Pay is introduced, and they need to take this opportunity to ensure that choice and competition are available for the benefit of their customers. The applicants are continuing to innovate and compete by developing their own mobile banking and mobile payment apps on other platforms, and participating in other third party mobile wallets that allow choice and competition. They have no desire to prevent their customers from using Apple Pay, and the idea of a collective negotiation is necessarily predicated on the banks' desire to offer Apple Pay. They only wish to offer other alternatives alongside Apple Pay.

Providing choice and competition will in no way undermine security or user experience

Apple objects that providing access to the iPhone's contactless payment functionality would undermine security and consumer experience. However, it provides no explanation of how this might occur. Android, Windows and BlackBerry phones all provide access to their NFC contactless payment functionality and there is no evidence that Android Pay, Samsung Pay or any of the mobile payment apps that have been developed for those platforms have affected security.

Any other mobile payment apps developed for the iPhone would use the same security features that Apple Pay uses, including tokenisation, customer verification by PIN or Touch ID, and encryption in the embedded secure element or – depending on how Apple chooses to implement access – securely in the cloud. Those apps would need to comply with the EMVCo security standards and any additional standards mandated by the card schemes – as apps on other platforms that allow access to the NFC contactless payment functionality already do.

The applicants are confident that Apple would implement third party access to this functionality in a way that maintains the highest level of security, and would subject any app that accessed the NFC functionality to intense scrutiny before approving it for distribution through the App Store.

User experience would only be altered if the customer chose to download an additional app and permitted it to access the iPhone's NFC functionality. Apple would need to develop a governance mechanism that would determine which payment card and which payment app would be presented at different times, but this has not proved to be a difficult issue on other platforms. Again, the applicants would expect Apple's solution to be elegant and user-focused.

Negotiations on security standards will benefit consumers

Apple has raised some concerns about the development of security guidelines and the scope and effect of collective negotiation on these issues. The applicants wish to ensure that consistent levels of security apply to third party wallets and to their own mobile payment options on all platforms. Apple has indicated that its current proposition for identification and verification (**ID&V**) would meet the applicants' requirements, and if this proves to be accurate then this aspect of the collective negotiation can be dealt with quickly. The applicants have otherwise clarified their concerns and objectives around security and have attached further details to this submission.

The ability to pass-through Apple's fees

Through collective negotiation, the applicants seek to secure the ability for each issuer to determine for itself whether and to what

will promote efficiency and fairness

extent it will pass on the transaction fees Apple charges for participation in Apple Pay. This will provide a competitive constraint on the fees that Apple charges, and will also subject the determination of the fees the issuers may charge to the competitive process.

There are well-established reasons why rules prohibiting charges for particular payment methods are inefficient and unfair, as they obscure the true costs of different payment methods and require more costly payment methods to be subsidised by consumers who do not use them. These reasons have been recognised by the Reserve Bank of Australia (**RBA**) in their removal of the "no surcharge" rules previously imposed on merchants by card schemes, and they apply equally to the "no fee" rules imposed on issuers by Apple.

An analysis of all interested party submissions supports the grant of authorisation

While a number of submissions have criticised the applicants for not simply signing up to Apple Pay on Apple's terms, these submissions appear to be based on the misapprehension that the applicants wish to promote their own mobile payment solutions to the exclusion of Apple Pay. In fact, the applicants wish to offer customers a real choice of mobile payments whichever mobile platform they choose.

Apple would naturally prefer to deal with card issuers on an individual basis using the "take it or leave it" approach that it has used successfully in other countries. However, its arguments against the collective negotiation are superficial and unconvincing. They ignore real differences between integrated NFC-based mobile wallets and other mobile banking or mobile payment apps and infrastructure. They appeal to security without providing any explanation of how allowing choice and competition in iPhone payments would compromise that security. They conflate a collective negotiation to redress imbalances in bargaining power with a hard-core cartel and use competition law concepts such as exclusive dealing and the national access regime that have no clear relevance to the assessment of benefits and detriments being undertaken.

Finally, they assert that Apple will never compromise – but this is a self-serving assertion which plays up to Apple's reputation but goes against its conduct in practice, and the ACCC should give it no more credence than it deserves.

Against these arguments, a number of submissions support the application and agree with the applicants on the need for real competition and choice, for security standards and for transparency of fees. Supportive submissions include those from Coles, the Australian Retailers Association, Bluechain, the Australian Payments Clearing Association, Australian Settlements Limited, Indue, Heritage Bank, Tyro Payments, eftpos and MasterCard.

In these circumstances the applicants urge the ACCC to grant the application for authorisation.

3 Public benefits of authorisation

3.1 Public benefits case

Irrespective of their choice of mobile phone, Australian consumers should not be restricted from choosing the mobile wallet that best meets their requirements and preferences.

The limited collective negotiation requested by the applicants is directed at achieving the public benefits associated with removing this restriction on consumers, and will also have flow-on benefits in relation to:

- allowing Australian consumers to enjoy the full benefit of investments that have been made in our payment infrastructure. Without collective negotiation, there is a material risk that Apple will be allowed to free ride on that investment;
- enjoying price and quality improvements that result from increased competition and choice in mobile wallet products;
- reducing the potential for inefficient and inequitable fee recovery; and
- greater adoption of mobile payment technology and confidence and stability in Australia's payment system.

3.2 Authorisation request

As set out in **Annexure A**, the applicants are seeking authorisation to collectively negotiate with Apple in relation to three issues:

- **exclusivity:** the ability to access or use the iPhone's NFC functionality to provide Australian consumers with integrated NFC-capable mobile wallets that can make NFC payments at point of sale (**POS**) (alongside and in competition with Apple Pay, which will remain the default mobile wallet for iPhone owners unless they wish to choose another mobile wallet);
- **security:** ensuring that all parties to the collective negotiation can rely on Apple Pay at least meeting the same security standards as those that apply to Australian credit card issuers (in relation to card payments and their own mobile wallets); and
- **pass-through of fees:** the ability of the applicants to make independent decisions as to whether to charge their cardholders for the additional costs incurred by their use of the Apple Pay mobile wallet.

As part of the authorised conduct, participants will agree not to introduce Apple Pay during the period of collective negotiation. However, participants are free to negotiate individually with Apple on all issues other than the three issues above at any time, including during the period of collective negotiation.

Further information on the proposed collective negotiation framework is provided at **Annexure A**.

3.3 The applicants' commercial rationale and incentives support the public benefits case

The Australian payments landscape is rapidly evolving. New transaction types, payment methods, channels and technologies are providing Australian consumers and businesses, with the potential for more payment options than ever before. As payment

technology and customer preferences evolve, customers' expectations of what their banks should provide are shifting. It is not clear yet which payment models will succeed.

What is clear is that in order to remain competitive in attracting and retaining customers, banks and payment providers need to be able to offer a suite of products and services that will provide the security and flexibility to best meet customers' payment preferences and capture the benefits of alternative payment methods.

To this end, Australian banks and payment providers have embraced innovation in technology, services and platforms and invested heavily in delivering various new payments technologies to customers – striving to continually improve the customer experience to make payments safer, easier, more convenient and ultimately more competitive.

In particular, Australia has led the world in the adoption of advanced payment technologies such as EMV chip-and-pin security and has invested heavily in the infrastructure needed to make contactless payments ubiquitous. Australian banks and retailers have made substantial investments in NFC terminals at POS and corresponding consumer education. Without this investment, the world-leading fast and widespread acceptance of "tap and go" NFC payments (and consequently of Apple Pay) would not be possible.[1]

Given the investment already made, and the importance of interoperability of payment methods (for example, cards on the American Express, Visa and MasterCard networks all being able to use the same contactless NFC terminal, and consequently Apple Pay being able to use those same existing terminals), it would be highly inefficient for Australian businesses to be forced to deploy an entire network of diverse connectivity options simply to satisfy Apple's commercial desire to avoid competition on NFC integrated mobile wallets. A proliferation of diverse connectivity options at the POS, with multiple terminal or reader options coupled with varying payment routines or behaviours presented at once, also potentially opens up substantial customer confusion and loss of efficiency. It is in the interest of not only Australian banks and retailers, but all Australians, to ensure that this investment in the existing, and still technologically relevant and up to date, NFC terminal infrastructure is utilised efficiently to its full potential.

This widespread consumer and merchant acceptance of NFC contactless payment transactions, and the related investment in terminals, combined with Australia's high levels of smartphone ownership and enthusiasm for new technology, means that payment card issuers need to be able to offer customers the next logical step in interface format – integrated mobile payments.

It is difficult to predict the full potential of mobile payment and mobile wallet services and the shape or form that innovation may take. In the applicants' view, mobile payments will only succeed if they offer customers, merchants and financial institutions the right combination of convenience, security and cost. In all likelihood, consumers will also need to be offered more than a simple "like for like" replacement of an existing contactless physical card, with additional enhanced features or functionality driven by the smart phone capabilities in order to drive widespread take-up. These attributes will only be

[1] In contrast, the adoption of Apple Pay in the US has been slow. At the time Apple Pay launched, only about 2% of the country's 12 million POS terminals were NFC-enabled. In February 2016, it was announced that the number of merchants accepting Apple Pay had increased to 2 million, however this still represents less than 20% of POS terminals in the US. See Smart Payment Association, *An Overview of Contactless Payment Benefits and Worldwide Deployments',* April 2016, available at: http://www.smartpaymentassociation.com/images/news/16-04-26-SPA-Contactless-Payment-Benefits-WP-Final.pdf (accessed 29 September 2016).

developed in an environment in which vigorous competition drives innovation, efficiency and continuing investment.

Conversely, the introduction of mobile payment or mobile wallet services on a basis that limits or prevents competition is likely to result in fragmentation, under-investment and a reduction in innovation and customer choice. The decisions made now have long term implications not only for the banks and wallet providers, but also for consumers and the future of the Australian payments system.

3.4 There is no basis for Apple's claim of detriments and delay

Apple has claimed that the applicants are using the application for authorisation as a means of delaying or blunting Apple Pay's entry into the Australian market, but evidence in this submission shows that the applicants have strong incentives to complete collective negotiations at the earliest possible time (see section 6). Indeed, with the Sydney mass transit electronic ticketing system (and potentially those of other major Australian cities) soon moving towards the use of "open loop" (eg, MasterCard and Visa) contactless payment cards, alongside the "closed loop" Opal card system, the applicants are keen for all of their cardholders regardless of their choice of mobile phone handset to be able to utilise the mobile wallet of their choice as soon as possible – as using a mobile wallet on the mass transit system can be more convenient than cards, as evidenced overseas in cities such as London.

Consistent with this goal, the applicants have prepared a framework for negotiations which they expect will simplify and facilitate collective negotiations with Apple (see **Annexure A**).

3.5 Support for the authorisation

As outlined in Table 1 below, a number of interested parties have shown significant support for the proposed authorisation and the public benefits identified by the applicants.

Table 1: Summary of interested party submissions supporting the authorisation and its public benefits

Authorised conduct and public benefit	Interested party	Summary of comments in support
Collective negotiation to gain access to the iPhone's NFC functionality allowing increased consumer choice and innovation	Coles Supermarkets Australia Pty Ltd	Consumer choice should be driven by the ability to tailor solutions rather than technical lockout
	Bluechain Pty Ltd	Locking control to alternate interfaces (such as NFC) causes disruption to market choice
	Australian Retailers Association	For as long as Apple Pay remains the only app that can use the iPhone's NFC functionality, the potential for innovation in mobile wallets and mobile payments will be limited
	Australian Payments Clearing Association (**APCA**)	Access to payment platforms and competition on open platforms are key enablers of innovation in payment services and products, and deliver tangible benefits to consumers and merchants
	Australian Settlements Limited	Smaller financial service providers do not have the scope to develop mobile wallets for each mobile device, rather, they seek to develop one app that can be used on both Apple's iOS or Google's Android OS

Authorised conduct and public benefit	Interested party	Summary of comments in support
	Heritage Bank Limited	Exclusivity reduces competition and successful collective negotiations are likely to result in greater customer choice with regard to the wallet used to make mobile payments
	Tyro Payments Limited	Eliminating third party access to the Apple NFC function stifles innovation and competition
Collective negotiation to ensure Apple Pay meets minimum security standards	APCA	Adoption and use of the APCA Guidelines will promote the safety and security of mobile payments in Australia and mitigate liability for fraud and unauthorised transactions
	MasterCard	Digital payment solutions must comply with internationally accepted standards for security and fraud prevention
Collective negotiation to remove Apple's restriction on the ability to pass through Apple's additional costs allowing more efficiency and transparency and less distributional inequity	Australian Retailers Association	Preventing issuers from charging their customers for use of a mobile wallet may lead to unreasonably high costs and unfair and inefficient cross-subsidies
	Australian Settlements Limited	Price transparency empowers consumers to choose the payment method on their device
	eftpos Payments Australia Ltd	Efficiency and transparency is an important feature in all payment systems as it allows both consumers and merchants to make informed payment choices
	Heritage Bank Limited	Lack of price transparency will mean that the cost of third party wallets will need to be cross-subsidised by the bank's other customers

Of the few submissions that have opposed the application, Apple has presented the strongest opposition. The rest of this document therefore seeks to answer Apple's main claims.

4 Facing Apple's bargaining power advantage: why the applicants need to collectively negotiate

4.1 Overview

There is a strong disparity in the bargaining position of Apple as compared with the individual applicants – a disparity that the authorisation seeks to address. Indeed, Apple's responding submission has made it clear that without the limited collective negotiation and collective boycott, any adoption of Apple Pay in Australia will be on Apple's terms. Such terms effectively protect Apple from competition in relation to integrated mobile payments using iPhones, unilaterally grant Apple the exclusive use of the existing NFC payments infrastructure built by third parties for integrated mobile payments using iPhone devices, create inefficiencies and are suboptimal for Australian consumers.

However, if authorisation is granted, there is a real likelihood that substantial efficiencies will be achieved and that significantly improved positions in relation to exclusivity, security standards and pass-through of costs will be negotiated for the benefit of Australian consumers.

4.2 Apple's significant bargaining power advantage

Apple's share of mobile devices in Australia, as well as the importance and characteristics of iPhone users as a key customer segment for Australian credit and debit card issuers, give Apple a significant bargaining advantage.

(a) Apple has a high share of smartphone sales in Australia and Apple's customers are particularly valuable for payment card issuers

Almost 80% of Australians have a smartphone, and as a manufacturer Apple has the highest share of smartphone sales in Australia at around 40%. Significantly, this market share is almost exclusively at the premium end of the smartphone market. Apple's share of smartphone sales by operating system is higher in Australia than it is in almost any other country. As a result, iPhone device users represent a key component of the addressable market for mobile wallet developers.

More importantly, iPhone device users are a particularly valuable customer segment for payment card issuers in relation to mobile payment technology. The average iPhone user tends to be wealthier and likely to conduct more and larger transactions than other customers. iPhone users are also more likely than the average customer to value the ability to make mobile payments, as they adopt and consume technology more enthusiastically than other smartphone users.

This is reflected in overseas research regarding the greater revenue opportunity for mobile payments companies provided by iPhone users than Android users and the characteristics of Phone users in Australia. According to research conducted in the US, Americans who make payments using their iPhones in stores spend nearly double that spent by Android users making the same type of payments.[2] Thus, even though Android accounts for a larger share of smartphones than iPhones do, this does not make up for the shortfall in mobile payment value or frequency. As a result, iPhone customers represent a larger payments revenue opportunity for companies that are interested in developing mobile payment products. However, this opportunity requires access to the currently closed NFC capability on iPhones.

(b) Apple has the ability to block access to iPhone customers

Apple controls the operating system, the mobile hardware and the software that can be introduced onto an iPhone. In effect, Apple has complete ability to control access to the all-important iPhone customer segment. For so long as Apple restricts access to the iPhone's NFC functionality, Apple will not face any competition from either existing or emerging mobile wallet providers in relation to these customers – Apple Pay will be the only NFC-enabled integrated wallet available to iPhone users.

Apple also knows that it is unlikely to face any consequences if Apple Pay is not available on the iPhone – ie, an iPhone user is unlikely to buy a Samsung phone only to access Samsung's mobile wallet..

According to Apple CEO Tim Cook:

> *…our iPhone loyalty rate is almost twice as strong as the next-highest brand. In addition, a growing portion of our revenue is directly driven by our existing install base. Because our*

[2] John Heggestuen, *Business Insider Australia,* 'IOS users are a much bigger revenue opportunity for mobile payments companies than Android users', 19 June 2014, available at: http://www.businessinsider.com.au/the-biggest-revenue-opportunity-is-on-ios-for-mobile-payment-companies-2014-6?r=US&IR=T (accessed 29 September 2016).

customers are very satisfied and engaged, they spend a lot of time on their devices and purchase apps, content, and other services. They also are very likely to buy other Apple products, or replace the one that they own [with a newer model].[3]

From the perspective of most iPhone owners, iPhones and non-iPhone devices are not close substitutes and there are high switching costs involved with moving from one ecosystem to another – which might be compared to moving house, in a digital sense. iPhone users tend to keep buying iPhones. This stickiness is also reflected in Australia's smartphone consumption and adds to Apple's strong comparative bargaining position. Further, the ability to make integrated mobile payments is only one, and today a relatively minor, potential functionality of a smartphone – a device which is no longer just a means to communicate but has become more of a "personal integrated remote (or digital assistant) for life" being the go-to device for many day-to-day activities. It is unlikely that mobile payment functionality would be a major determinant of switching from iPhones to non-iPhone devices, and this functionality is at best a secondary or tertiary differentiating characteristic in the eyes of consumers.

Additionally, many iPhone purchase decisions are made via "lock in" contracts with mobile phone carriers where the cost of the handset is subsidised by the mobile carrier over the term of the contract, typically two years. For these consumers, the ability to economically switch from an iPhone to a non-iPhone device only comes up every two years as they come out of contract.

(c) Apple has significant bargaining power

In negotiations regarding Apple Pay, the applicants and Apple are in significantly different bargaining positions, because:

- Apple controls the operating system, the mobile hardware and the software that can be placed on the iPhone and ultimately controls access to iPhone customers;
- increasing consumer appetite to use their mobile phones to make payments requires that the banks provide integrated mobile payment solutions or risk losing their customers;
- for as long as Apple restricts access to the iPhone's NFC functionality, Apple Pay will be the only mobile payment solution for iPhone users wanting to use their phones to make contactless payments; and
- iPhone customers in particular value the ability to make mobile payments and also represent significant value to issuers, which means that in individual negotiations the banks will have no choice but to provide Apple Pay on Apple's own terms in order to satisfy customer demand for mobile payment solutions. This is an outcome which limits choice and is ultimately suboptimal for Australian consumers.

As reflected in Apple's responding submissions, Apple has the capacity to offer "take it or leave it" terms to the applicants, knowing that a refusal to accept the terms offered will impact the banks' ability to compete in card issuing and more broadly in retail banking services. This is especially true now that ANZ Bank has joined Apple Pay and will increasingly be the case as mobile payments become more commonplace (see section 9.8 below). At the same time, Apple is unlikely to lose iPhone customers and, from Apple's perspective, the cost of negotiation breakdown is low relative to the potential

[3] Serenity Caldwell, Jason Snell, 'This is Tim: Apple's CEO on Q1 2016', Financial earnings live transcript, 26 January 2016, available at: http://www.imore.com/tim-apples-ceo-q1-2016 (accessed 29 September 2016).

benefits of exclusivity. Although Apple needs to sign up issuers to expand Apple Pay, Apple is the party with the bargaining power in the negotiation, not the applicants.

Apple's position in relation to the iOS platform not only gives it strong bargaining power in Apple Pay negotiations with issuers, but arguably also allows it to enjoy market power in respect of applications and services for iPhone users.

As noted in the expert report of Dr. Susan Athey:

> *… Apple competes to attract a large group of consumers, and then exercises market power over firms that wish to do business with those consumers.*

Further Dr. Susan Athey finds that:

> *Even though Apple competes for users of smartphones, it has market power in respect of applications and services for iPhone users. The "competitive bottleneck" occurs because the only way for service providers to access iPhone users is through Apple's platform. The market power held by Apple translates into highly asymmetric bargaining power for Apple when negotiating individually with card providers.*[4]

However, a finding of market power is not necessary for the purposes of this application for authorisation and the applicants do not rely on any such finding in order to demonstrate Apple's bargaining power and the disparity in bargaining power between Apple and individual card issuers.

(d) Apple's submission that the individual applicants have greater bargaining power than Apple is incorrect

Apple's submission claims that the individual applicants have bargaining power against Apple, but this does not reflect the dynamics discussed above or the ability for Apple to (and the fact that Apple has) put "take it or leave it" terms on the table.

Payments are not one-sided markets and Apple's submissions do not provide a proper assessment of the bargaining power of either Apple or the applicants given that fact. For example, Apple dismisses the suggestion of bargaining power by noting:

- it is a new entrant in the banking sector;
- there are numerous existing mobile payment and mobile wallet providers in Australia with which Apple Pay must compete to win over customers; and
- there are other mobile device manufacturers that Apple competes with (and mobile phone shares are highly volatile).

None of these points addresses the bargaining power relevant to the authorisation. Apple controls not just the handset, but the operating system, the hardware and the software available to iPhone users in Australia. As a result, Apple controls (and has the ability to block) access to those customers. The limited collective negotiation sought is concerned with obtaining access to those customers to provide them choice in mobile payment and mobile wallets. Apple's bargaining power in relation to the control of access to those customers is not relevantly constrained by the fact that there are other payment and mobile banking options in Australia (which do not directly compete with Apple Pay in any case).

[4] Expert report prepared by Dr. Susan Athey.

As noted above, when a consumer chooses a mobile phone handset, the ability of that handset to make different forms of NFC contactless payments is not high on the list of selection criteria, with exterior design, screen size, memory, processing speed, price and other functions being of key importance. Hence, at the time the consumer is purchasing an iPhone handset, there is likely to be no realisation that Apple Pay is the only application able to access the NFC function. This leads to the position of Apple being successful in convincing consumers (who have already made their iPhone purchase decisions) that it is their bank that has chosen not to offer Apple Pay, rather than Apple that has chosen not to provide NFC access to their bank's own mobile wallet.

4.3 Collective negotiation / boycott is necessary in this case

The purpose of the authorisation is to reduce the significant disparity in bargaining power between the applicants and Apple in order to achieve better market outcomes than would be possible without the authorisation.

Collective negotiation and associated collective boycott conduct can be authorised where there is a net public benefit. As outlined in section 3 above, the ability to collectively negotiate with Apple in relation to NFC access, security and fee pass-through will result in public benefits for consumers. The limited nature of the negotiation also restricts any potential detriment from the collective arrangements.

As noted by the ACCC, where collective bargaining alone is not sufficient to address market failures and improve the efficiency of contracting and associated market outcomes, the threat of collective boycott may be an efficient negotiating tool that facilitates the collective negotiation of more efficient contracts and better market outcomes. In particular, the ACCC has stated that:

> *Collective boycotts are more likely to be appropriate where there is a significant disparity in bargaining power between the bargaining group and the target, or where the target is less willing to participate in collective bargaining and the failure to collectively bargain would result in inefficiencies or other public detriments.*[5]

This is a situation in which a collective boycott is appropriate because:

- there is significant disparity in the bargaining position of Apple as compared with the individual applicant banks in relation to negotiations regarding Apple Pay (see section 4.2 above); and
- a failure to collectively negotiate will result in inefficiencies and public detriments (see section 5 below).

The collective boycott is required to give effect to the collective negotiation and meaningfully bring Apple to the negotiating table, thereby facilitating the realisation of the benefits discussed in section 3 above.

4.4 Collective negotiation / boycott will improve the applicants' bargaining position and has a real chance of success

Apple has said that it will never negotiate in relation to exclusivity, the ability to pass-through fees and minimum security standards. This is clearly the likely outcome in the

[5] ACCC, Media Release, 'ACCC proposes to revoke immunity for collective bargaining and collective boycott against NRL by betting agencies', 26 February 2014, available at: https://www.accc.gov.au/media-release/accc-proposes-to-revoke-immunity-for-collective-bargaining-and-collective-boycott-against-nrl-by-betting-agencies (accessed 29 September 2016).

context of individual negotiations; and is exactly the public position that would be expected from a party with the kind of bargaining power that Apple enjoys.

Submissions that argue that Apple will never reach a commercial arrangement on these issues, including Apple's own submissions, draw on Apple's reputation as intransigent, closed and controlling. However, an examination of Apple's past conduct shows that these qualities – and the differences between Apple and other hardware and software providers – can be exaggerated, as shown below.

(a) Apple is already under pressure to make changes in relation to Apple Pay

When initially launched, Apple negotiated with US banks under conditions of great secrecy, commercial pressure and in a markedly different contactless payment environment (ie, while contactless payments are ubiquitous in Australia, there have been very low take-up rates in the US). The outcome of those negotiations reflects the amount of bargaining power that Apple was able to exercise at that time.

Since then, when trying to launch Apple Pay in other jurisdictions, Apple has needed to make changes and concessions on aspects that were previously presented as "non-negotiable".

- Canada: in Canada, an industry wide taskforce was established before Apple entered the Canadian market to respond to fraud concerns associated with the use of Apple Pay in the United States and to ensure that the banks could influence the authentication and card provisioning processes associated with Apple Pay. This resulted in the publication of a *Payments Security White Paper* in July 2015 highlighting the need to maintain the highest level of payment security, promote security and support innovation (**Canadian White Paper**).

  The Canadian banking industry was concerned with the control that Apple retained over card authentication and provisioning in the US market, where Apple initially employed a 'red, yellow or green path' process for handling card provisioning requests by consumers:

  - a green path allows the card to be provisioned without referral to the issuer;
  - a red path is where the provisioning request is declined without referral to the issuer; and
  - a yellow path requires card issuer approval for a card to be provisioned.

  This model of card provisioning can be described as a 'pull model' and was alleged to result in high levels of card fraud. Following the publication of the Canadian White Paper, cross-industry workshops were held to negotiate and agree upon a standard approach to authentication and provisioning of cards in mobile wallets. The Canadian banks and a number of mobile wallet providers, including Apple, participated in these workshops. Ultimately, the model of card provisioning that was negotiated in Canada is a 'push model' whereby the banks retain control over the provisioning of a card into Apple Pay through the introduction of mandatory 'secondary authentication' by the banks to verify customer information before a card can be used in Apple Pay.

  This change from the US model was assisted by a context where a number of Canadian banks initially approached aspects of the negotiation on a common basis and where it was crucial for Apple to succeed in negotiations with Interac (Canada's domestic debit card scheme, similar to eftpos in Australia).

- China: Apple had has difficulty entering the Chinese market and has now partnered with UnionPay in order to facilitate entry and expansion. The applicants understand that the major banks and telecommunications providers in China adopted a collaborative approach in relation to the introduction of Apple Pay by conducting negotiations through UnionPay, which is a unified Chinese bankcard association and all bankcard issuers in mainland China are members.[6] This negotiation is reported to have resulted in significant compromises on the level and timing of fees and other changes, and may have included the use of an NFC-enabled SIM card of the kind used by China Mobile and China Unicom rather than the iPhone's embedded systems.[7]

- Japan: Apple Pay's recent launch in Japan reportedly involved a number of compromises from Apple, including by upgrading the iPhone and Apple Watch hardware for compatibility with the FeliCa variant of NFC,[8] and allowing public transit and small denomination POS payments using a Suica card without requiring a Touch ID fingerprint or PIN.[9] This is an example of Apple making changes not only to its hardware, but also in relation to its 'non-negotiable' security requirements.

The applicants understand that similar concerns to those raised by the applicants in relation to access to the iPhone's NFC functionality are being raised in other jurisdictions:

- in South Korea, it has been reported that financial technology companies have announced an intention to commence an action against Apple over Apple's refusal to open its API for NFC at the Korean Fair Trade Commission;[10] and

- in Switzerland, the consumer protection authority, Stiftung für Konsumentenschutz (**SKS**), filed a complaint with the Swiss competition commission Wettbewerbskommission (**Weko**) in relation to Apple's refusal to grant other mobile payment apps – in particular Twint – access to the iPhone's NFC technology ahead of the Apple Pay launch.[11] Apple reportedly confirmed that it would not open up NFC functionality for third-party payment services, for reasons of "security and convenience".[12] Weko has reportedly said that it is aware of the problem and will watch how the market develops.[13]

This is evidence of increasing pressure on Apple to open up access to the iPhone's NFC functionality – a reasonable request, in line with historical opening up of other features,

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[6] China UnionPay, 'FAQs', available at: http://en.unionpay.com/merchantService/faqs/file_4420480.html (accessed 29 September 2016).

[7] Zhang Yuzhe, *Caixin*, 'Chinese banks to pay much smaller fees to Apple Pay than US counterparts', 22 February 2016, available at: http://english.caixin.com/2016-02-22/100911334.html (accessed 30 September 2016).

[8] Apple, Press Release, 'Apple Pay coming to Japan with iPhone 7', 7 September 2016, available at: http://www.apple.com/newsroom/2016/09/apple-pay-coming-to-japan-with-iphone-7.html (accessed 29 September 2016).

[9] See Apple Japan's promotional video for Apple Pay using iPhone 7 at https://www.youtube.com/watch?v=2eUIr-sn570&feature=youtu.be (accessed 29 September 2016).

[10] Cho Jin-young, *Business Korea,* 'Appeal against Apple policy: Local fintech firms will appeal to FTC over Apple's closed policies', 12 September 2016, available at: http://www.businesskorea.co.kr/english/news/ict/15836-appeal-against-apple-policy-local-fintech-firms-will-appeal-ftc-over-apple%E2%80%99s-closed (accessed 29 September 2016).

[11] *Telecom Paper*, 'SKS files Apple m-payments complaint with Weko', 6 July 2016, available at: http://www.telecompaper.com/news/sks-files-apple-m-payments-complaint-with-weko--1152095 (accessed 30 September 2016); Apple, Press Release; Apple, Press Release, 'Apple Pay now available in Switzerland', 7 July 2016, available at: http://www.apple.com/newsroom/2016/07/apple-pay-now-available-in-switzerland.html (accessed 30 September 2016).

[12] *Neue Zürcher Zeitung*, 'Apple Pay startet in der Schweiz', 7 July 2016, available at: http://www.nzz.ch/digital/bezahlsystem-apple-pay-startet-in-der-schweiz-ld.104159 (accessed 30 September 2016).

[13] *Neue Zürcher Zeitung*, 'Konsumentenschutz reicht Klage bei Weko ein', 6 July 2016, available at: http://www.nzz.ch/digital/einfuehrung-von-apple-pay-in-der-schweiz-konsumentenschutz-reicht-klage-bei-weko-ein-ld.104173 (accessed 30 September 2016).

that will drive competition for mobile payment solutions, speed up adoption and deliver benefits for consumers worldwide.

(b) The ability to engage in a collective boycott will strengthen the applicants' bargaining position

The experience in Canada and the other overseas examples set out in section 4.4(a) above demonstrate that where there is a decrease in the disparity of bargaining power between Apple and issuers (eg, as a result of industry pressure from either particularly significant participants or collective negotiation), Apple is prepared to respond and adjust its "non-negotiable" terms and conditions.

However, as has also been reflected in the overseas experience, such response can be easily neutralised with a "divide and conquer" strategy in which Apple persuades each issuer to accept its terms by playing each issuer off against the others with the prospect that unless an issuer agrees, it will find itself at a competitive disadvantage, as its competitors will be able to offer customers the ability to use Apple Pay while it will not. This dynamic is already in motion in Australia with ANZ Bank noting the following on its website:

> ***Not with ANZ?***
> *You won't find Apple Pay at the other big banks, so make sure you're ready with an eligible ANZ card.*[14]

In this case, the ability to engage in collective negotiation with an associated collective boycott will afford the applicants some protection against a "divide and conquer" strategy and address the market failure that is likely to occur in the counterfactual. As noted in the CRA report:

> *In this particular case, access to the NFC chips in iOS devices, which is essential for the provision of integrated mobile wallets on iOS devices, is a scarce resource that is controlled by a player that is also competing downstream with its own integrated mobile wallet on iOS devices. Vertically integrated firms that control upstream inputs that are important for downstream competition often have incentives to refuse access to those inputs in order to favour their own downstream product. In this particular case, Apple's policy is not to provide access to its NFC chips, and for the reasons explained in Section 4 of the first CRA report, in individual negotiations the respective bargaining positions of Apple and the applicant issuers are such that the likely counterfactual is one in which the applicant issuers will agree to join Apple Pay, Apple will maintain its policy of exclusivity, and Apple Pay will be the only integrated mobile wallet on iOS devices. As a result, there will be limited competition downstream in the supply of mobile wallets on iOS devices. This is the market failure that is the subject of the application for authorisation of collective negotiations. This limited competition will likely result in:*[15]
>
> *a. limited choice of integrated mobile wallets for iOS device users (Apple Pay will be the only option);*
>
> *b. higher prices for mobile wallets;*
>
> *c. lower quality mobile wallets;*

[14] ANZ, 'ANZ with Apple Pay', available at: http://www.anz.com/personal/ways-bank/mobile-banking/apple-pay/ (accessed 29 September 2016).

[15] See generally section 6 of the first CRA report, which considers, in reverse, the benefits of a waiver or relaxation of exclusivity and hence the rectification of the market failure.

d. less investment and innovation in mobile wallets; and

e. high fees charged by Apple for the use of Apple Pay.

Further, as noted in the report of Dr. Susan Athey:

> *In contrast, if card issuers can collectively bargain and boycott in relation to Apple Pay, the value created by card issuers as a group will be reflected in negotiations, which increases the probability of negotiating to eliminate or improve the restrictive terms and conditions surrounding exclusivity, security, and transparency of fees. Modifying or eliminating Apple's restrictive conditions will promote competition, transparency, and innovation in mobile payments, which in turn increase adoption and producer and consumer surplus in Australia.*[16]

4.5 Apple's submissions on boycotts do not negate the case for authorisation

Under the *Competition and Consumer Act 2010* (**CCA**), collective bargaining and boycott behaviour can be authorised in appropriate circumstances. Apple's assertion that collective boycotts will almost always have too high a degree of anti-competitive detriment to ever pass the public benefit test is incorrect as a matter of law and contradicts the plain intention of the Australian Parliament. If Apple were correct, the Australian Parliament would have restricted the benefit of collective bargaining to the potential for increased cooperation and information exchange but not extend it to correcting an imbalance in bargaining power through the ability to collectively refuse a bad deal.

As noted above and in the applicants' original submission, the ACCC has identified the public benefits that can arise when a collective negotiation process is supported by a collective boycott. As the ACCC said in its submission to the recent Competition Policy Review:

> *In some circumstances, attempts by small businesses to collectively bargain with a large supplier or acquirer without the ability to threaten and/or engage in a collective boycott, may render the bargaining process ineffective. The counterparty business will refuse to negotiate with the collective bargaining group or only agree to similar terms to those that would have been agreed without the collective bargaining process. Whether the ability to collectively boycott will bring the counterparty to the table to negotiate, and result in better contractual arrangements, will depend on the particular circumstances of the negotiations.*[17]

In relation to Apple Pay, collective bargaining will not be effective, and the public benefits derived from the ability to collectively negotiate will not be possible, without the collective boycott. Individual negotiation in circumstances where one party knows that the other cannot walk away from the negotiation is unlikely to be successful, and in most circumstances the same will apply to collective negotiation. As Trindade, Smith and Merrett have pointed out:

> *The debate about collective negotiation versus collective bargaining in the Chicken Meat Growers authorisation brought this starkly into focus by suggesting that collective bargaining alone can result in public benefit without any need for a collective boycott. But, in reality, being allowed to ask for the same price and terms without being able to say no at any given*

[16] Expert report prepared by Dr. Susan Athey.

[17] ACCC, 'Submission to the Competition Policy Review – Response on Draft Report', 26 November 2014.

> *point is not negotiating. Indeed, any collective bound by such a restriction is in a position not dissimilar to a vendor undertaking a fire sale.*[18]

The implication in Apple's submission that a collective boycott should not be available to the applicants due to their size or profitability in the retail banking sector reflects a misapplication of the test for authorisation. The legal question is whether there would be a net public benefit from the proposed conduct. It is not the size of the applicants that is relevant but the disparity in bargaining power between Apple and the applicants resulting in the potential for inefficient outcomes in Apple Pay negotiations.

Apple's submission relies on the outcome of the 2006 Tribunal decision *Re VFF Boycott Application* (2006) ATPR 42-0120 (***Re VFF Boycott Application***) to infer that because a collective boycott was not authorised in that fact scenario it should not be authorised in relation to Apple Pay.

As noted in Apple's submission:

> *But even in the VFF Chicken Growers matter, while the Tribunal accepted there was some evidence that the large processors had acted opportunistically to impose terms and conditions of supply on growers which were economically inefficient and a public detriment, the Tribunal found this detriment was short term and likely to be overcome by the processors' own demands for supply. Consequently, the Tribunal found the detriment raised by the Applicants was transient.*

The scope of the collective arrangements sought in relation to Apple Pay and the factual circumstances surrounding the nature of the inefficiencies and public detriments that will result absent the authorisation are quite distinct from those in *Re VFF Boycott Application.*

In *Re VFF Boycott Application,* the Tribunal found that:

> *While collective boycotts will enable Growers to overcome, to some extent, opportunistic behaviour by Processors, we believe demand growth would, over time, be likely to achieve this in the absence of authorisation.*[19]

In other words, as reflected in the extract from Apple's submission set out above, the inefficiencies or public detriment that would arise without the collective boycott were considered by the Tribunal as "transitory". This is not the case here.

The public detriments and inefficiencies that the applicants seek to avoid:

- Apple Pay being the only choice available to iPhone users;
- Apple Pay being the only integrated wallet app that can access this key component of the addressable market;
- the inability to exert competitive pricing pressure on Apple in relation to its fees for Apple Pay (and Apple's ability to increase those fees in future);

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[18] Rachel Trindade, Rhonda Smith and Alexandra Merrett, 'The Australian difference: has the public benefit test been eroded?' *The State of Competition*, Issue 12 (May 2013).

[19] *Re VFF Boycott Application* (2006) ATPR 42-0120, [454].

- the potential for inequitable cross-subsidisation of Apple Pay users by other Australians; and

- not being able to collectively negotiate in relation to security,

will not be able to be overcome without authorisation.

The other reason the Tribunal decided that the net public benefits test was not met in *Re VFF Boycott Application* was a concern that:

> *… Growers might use their enhanced bargaining power to achieve market outcomes that more than offset any gains that may result from more rapidly overcoming opportunistic behaviour by Processors.*[20]

As noted by the Tribunal:

> *However, just how Growers would seek to exercise the power to boycott in their negotiations with Processors is highly uncertain. While we are confident they will be able to use the power to overcome opportunistic behaviour by their Processors, we are not confident they will have the incentive to use it only in ways that will lead to more efficient market outcomes.*[21]

The scope of the collective negotiation and boycott in *Re VFF Boycott Application* was much broader than is the case here, and the detriments that the Tribunal considered would have a real chance of arising are also distinct from this application. As such the fact that the net public benefits test was found not to be met in that fact scenario does not mean it is not met in this application.

The ACCC appears to consider that the consequence of *Re VFF Boycott Application* in discouraging applications for collective bargaining supported by a collective boycott is an unfortunate one:

> *Currently, however the ACCC receives very few collective bargaining proposals that involve collective boycott activity, even when it could be efficiency-enhancing. A reason for this may be a decision by the Tribunal in 2006 to overturn the ACCC's determination granting authorisation to allow chicken growers in Victoria to collectively withhold their services where negotiations broke down with chicken meat processors.* [22]

In this case the applicants submit that the limited collective boycott accompanying the proposed collective negotiation would be efficiency-enhancing and the Tribunal's decision in *Re VFF Boycott Application* should not raise a presumption against authorisation or prevent a proper consideration of these benefits.

5 Without authorisation there will be public detriments

5.1 Overview

Without authorisation, individual banks will not have the bargaining power required for there to be any meaningful chance of Apple genuinely negotiating in relation to

[20] *Re VFF Boycott Application* (2006) ATPR 42-0120, [454].
[21] *Re VFF Boycott Application* (2006) ATPR 42-0120, [451].
[22] ACCC, 'Submission to the Competition Policy Review – Response on Draft Report', 26 November 2014.

exclusivity, pass through and security standards. This has been made clear by Apple's responding submission. This section addresses these public detriments in more detail.

5.2 No choice, no flexibility and no competition

Without authorisation, Australian users of iPhone devices will have no choice between integrated mobile wallets. When making integrated mobile payments, Australian users of iPhone devices will have one choice and one choice only – Apple Pay.

Different mobile wallets have the capacity to offer different functionality, features and services to entice consumer take-up (including loyalty points or other incentives to encourage use of particular wallets). Customers benefit from having the ability to choose between integrated mobile wallets to best meet their preferences and needs:

- Some customers may value the ability to manage payments within the same application they use to manage their accounts, manage personal budgets, check balances and credit limits, and make transfers between accounts. Apple Pay does not currently offer its customers this functionality. However, these functions are available to Android device users through issuers' proprietary mobile wallets integrated with a general mobile banking app and could be made available to Apple customers if Apple allowed access to the NFC functionality.

- Other customers may value the flexibility to choose between different mobile wallets on a transaction by transaction basis. From a consumer perspective, it may be important to be able to simultaneously access the consumer's account balance or credit limit to ensure the transaction can go ahead without penalty or in line with a personal budget, or there may be savings or benefits available to the consumer for using particular mobile wallets at particular retailers (eg, loyalty points or discounts).

With only one choice of integrated mobile wallet available on iPhone devices, consumers are stripped of the benefits described above, benefits which may increase in value as technology develops on other platforms.

Competition and choice between different integrated mobile wallets also drives innovation and better price/quality outcomes for consumers. However, without the authorisation, there will be no competition between integrated mobile wallets on iPhone devices – an outcome which ultimately will affect the investment in mobile wallet technology and limit the full potential of mobile payment adoption in Australia (see section 5.4 below).

Apple's submissions on choice and competition do not deny this counterfactual outcome. In fact, Apple confirms that in the counterfactual, the only integrated mobile wallet available to Australian iPhone users will be Apple Pay.

5.3 No competition from other contactless payment options

Apple's submissions on choice and competition in the counterfactual fail to acknowledge the important differences between integrated mobile wallets and other contactless payment methods, in particular the limitations of other contactless payment methods as competitive alternatives to NFC-enabled integrated mobile wallets.

In Australia, the industry has made substantial investment in payments technologies and in particular in the deployment of NFC technology. Merchant terminals accepting contactless payments via NFC technology are ubiquitous. There is already a widespread consumer acceptance of contactless technology and contactless payments, so much so that per capita contactless payments in Australia are among the highest in the world. There has been a 42% growth in contactless card accounts between 2014 and 2015 and

contactless penetration has grown to the point where 74% of all MasterCard in-store transactions are now contactless.[23] In this environment, any new mobile payment technology has to be seamless and integrated enough for it to make sense for customers to choose to "tap and go" with their mobile instead of a physical card.

Apple's submission notes that Apple does not restrict its partners from developing iPhone apps and that in the counterfactual there are a wide range of contactless payment options available in Australia (including QR code based wallets, mobile banking apps that in some cases complete POS transactions, and non-mobile options such as NFC-enabled credit cards and debit cards). However, the "options" put forward by Apple will not directly compete with Apple Pay and will not provide an adequate solution to iPhone users seeking to make contactless payments with their mobile phones:

- NFC-enabled credit and debit card: NFC-enabled credit and debit cards, although widely used and providing the convenience of "tap and go" payments, do not provide consumers with the benefits derived from integration in a mobile payments wallet, including additional customer verification, immediate feedback on successful completion, the potential for greater convenience and integration of loyalty programs, and many other potential consumer-benefiting future uses of the "smart" capabilities inherent in a location-aware, internet-connected smartphone. Furthermore, the NFC function on a mobile phone will be easier to use than a card in a physical wallet as and when the mass transit electronic ticketing systems go "open loop", as "antenna clash" does not occur on the phone.

- Mobile banking apps: mobile banking apps can provide integrated NFC functionality on compatible Android phones where access to the NFC functionality is not restricted. However, for as long as Apple restricts access to the iPhone's NFC functionality, mobile banking apps for iPhones cannot provide a directly competitive integrated mobile wallet that iPhone users could use instead of Apple Pay. They require an NFC sticker or tag (containing a separate and discrete NFC chip and antenna) to allow iPhone users to complete POS transactions by tapping the mobile near the POS NFC terminal. This lack of integration of NFC payment functionality is a significant limitation on the benefits that can be derived by consumers from a mobile bank application as compared to integrated wallets such as Apple Pay. These limitations were explored in detail in CRA's Report which was submitted in support of the application for authorisation.[24] Apple has elsewhere recognised that currently Apple Pay complements, rather than competes with, the applicant banks' mobile offerings.[25]

- QR code based wallets: mobile applications that rely on QR codes are not a suitable alternative to integrated NFC for the following reasons:

  - *Australia's payments infrastructure*: the situation in Australia, where NFC-enabled POS terminals are ubiquitous and there is already widespread consumer acceptance of, and preference for, NFC-enabled contactless payments, is very different to other countries such as China, where QR code based mobile wallets such as Alibaba's Alipay and Tencent's Tenpay are very popular and offer an alternative to Apple Pay for iPhone users because of the existing payments system infrastructure and consumer familiarity.

[23] Centre for Internet Safety, 'The Truth About Contactless Payments', March 2016, p 4.

[24] Charles River Associates, 'Collective Negotiations by Issuers with Mobile Wallet Providers', 12 May 2016, pp 5-6.

[25] Authorisation applications A91546 & A91547, Submission by Apple, 26 August 2016, section 4.2.

- *convenience and functionality*: because there is already widespread use of NFC-enabled contactless payments in Australia, in order to be viable, mobile payment technology has to be seamless and integrated enough for it to make sense for customers to choose to "tap and go" with their mobile instead of a physical card. Mobile wallets that rely on QR codes cannot provide the convenient and seamless experience for consumers that NFC-enabled mobile wallets can (or NFC-enabled credit and debit cards for that matter). To use a QR code to make a payment a user must unlock their smartphone, open a specific QR code reader application, scan the QR code displayed on the QR code enabled terminal with the iPhone camera and typically enter a passcode before receiving confirmation of payment. Using an NFC-enabled mobile wallet to make a payment is much faster and more convenient: the payment will be triggered when your phone is near a contactless payment reader. Depending on the mobile wallet, a passcode may be needed. In the case of Apple Pay, a user just needs to have their finger on the Touch ID button.

- *POS confusion*: in Australia, POS transaction "behaviour" and the series of steps required to make a contactless payment is well understood by consumers. That is, there is no confusion about the process necessary to pay for goods or services at POS via a contactless payment, which generates efficiency and reduces POS transaction times for both consumers and merchants. This level of understanding is a direct result of education initiatives undertaken by the industry in general, such as the PIN@POS campaign.[26] This is a direct contrast to the current situation in the US, where there is widespread consumer dissatisfaction and confusion about the series of steps necessary to make an electronic payment with a potential mixture of signing, "chip dipping" and swiping and no clear standard – to the extent that some POS terminals have elements disabled or taped over by the merchant,[27] and every POS transaction is "a horrible guessing game".[28] The introduction of an alternative to the already ubiquitous NFC standard is likely to lead to similar confusion (and the resulting inefficiencies) around the correct POS transaction process for consumers in Australia.

Without authorisation, there will be less choice and competition in relation to mobile payments and mobile wallets because Australian iPhone users will have no choice in integrated mobile wallet other than Apple Pay, and there will be no competition between integrated mobile wallets on iPhone devices.

5.4 Lost opportunity for investment and innovation

The applicants agree with Apple that there will be a certain amount of investment and innovation in mobile wallet technology with or without the authorisation. The applicants have already individually invested significantly in various competing mobile based apps and technologies. However, absent the authorisation, the potential extent, speed and quality of investment and innovation will be much lower, as the inability to access the iPhone's NFC functionality reduces the impetus for investment and innovation. This will

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[26] ANZ, 'The PIN is mightier than the word', 28 May 2014, available at: https://bluenotes.anz.com/posts/2014/05/the-pin-is-mightier-than-the-word/ (accessed 29 September 2016).

[27] Karen Workman, *The New York Times,* 'Confused by Chip Credit Cards? Get in Line', available at: http://www.nytimes.com/2016/08/06/business/chip-credit-cards-for-dummies.html?_r=0 (accessed 29 September 2016).

[28] Dieter Bohn, *The Verge,* 'Credit card companies are blowing it with chip payments', 26 July 2016, available at: http://www.theverge.com/circuitbreaker/2016/7/26/12287360/credit-card-companies-blowing-emv-chip-payments (accessed 29 September 2016).

lead to less choice and competition not only for iPhone users but in relation to mobile wallet technology more generally.

(a) No access to a significant segment of the addressable market diminishes investment incentives which in turn reduces innovation and competition

As outlined in sections 4.2(a) and 4.2(b) above, iPhone customers represent a significant premium segment of the addressable market for mobile payment solutions and Apple controls access to that segment of the market.

The costs of investments in mobile wallets by payment card issuers and third parties are largely fixed and common across customers and across platforms, leading to economies of scale and scope. Once an integrated mobile wallet had been developed for Android, there would be only a small incremental cost to making a similar wallet available on iPhones (assuming access to the NFC function was permitted).

Without the ability to offer competing integrated mobile wallets to iPhone users, the addressable market for developers will be significantly reduced in terms of both size and value. Without the ability to generate returns from iPhone users as well as other users, investments that would be commercially justified if iPhone device users were part of the addressable market may not occur.

Apple's submission does not deny the impact of the smaller addressable market on investment and innovation for integrated mobile wallet functionality. It simply restricts the discussion of innovation to Apple Pay, non-integrated complementary solutions on iPhone platforms (or solutions using non-NFC technology such as QR codes) and innovation on Android platforms. The treatment of innovation on Android platforms implicitly acknowledges the value of the iPhone user segment without discussing or taking into account the impact of the loss of that segment on mobile technology development as a whole (ie, the reduced incentives to develop on the Android platform as well).

(b) Mobile payment solutions without integrated NFC access tend to fail

While Apple argues that other contactless payment systems are an alternative to NFC, it is a fact that in Australia, as in many countries, the only realistic option for contactless payments is based on NFC standards (see section 5.3). NFC offers a simple, convenient and secure mobile payment experience that other technologies cannot match. That is why Australian banks and merchants have invested heavily in NFC technology and why Apple has chosen NFC for Apple Pay. Apple knows as well as the applicants that in Australia, as in many countries, a mobile payment system that does not use NFC is unlikely to succeed.

The lack of access to the iPhone's NFC capability has contributed to the failure of many mobile wallet and mobile payment systems. Most recently:

- In the United States, CurrentC, a QR-code wallet developed by some of the largest retailers such as Walmart, BestBuy and CVS, closed in June 2016.

- In New Zealand, Semble, a joint venture between two banks, three mobile carriers and a payments network operator, closed in July 2016. It had offered NFC payments and public transport payments but was not available on iPhones.

- In Canada, SureTap, a wallet provided by five mobile carriers and CIBC bank on Android and BlackBerry mobile phones, closed in August 2016. Its chief operating officer attributed the failure to a lack of access to the iPhone's payment functionality:

If we'd been able to deploy a wallet on Apple and non-Apple handsets, we would have more access for issuers and it would still be in existence today," Ledas says. "We went to Apple and talked about getting access to the secure element. The answer was clear – no."[29]

- In Switzerland, Paymit, a peer-to-peer and QR-code based mobile payment system backed by UBS, Zürcher Kantonalbank and the SIX Swiss stock exchange, announced that it was merging with rival Twint, a Bluetooth Low Energy and QR-code based payment mobile system backed by Credit Suisse and PostFinance, in May 2016. Twint chose Bluetooth instead of the more widely accepted NFC because of lack of access to the iPhone's NFC functionality:

  Twint wants to offer a payment solution that can be used with both iOS and Android smartphones. NFC cannot currently be used with iPhones (iOS).[30]

  A new Twint will be launched in 2017, again combining Bluetooth and QR-code payments. Swiss media reports that, apart from now being later to market than Apple Pay:

  Twint faces another significant disadvantage against Apple Pay: Apple blocks NFC (Near Field Communication) technology in its smartphones for other payment operators. With a 50 per cent share of the smartphone market [in Switzerland], that is a serious obstacle. It was already enough to cause the Swisscom payment app Tapit to fail.

  In the meantime, Apple Pay can connect with the payment terminals of most Swiss retailers. The Bluetooth technology, which Twint relies on, is not yet widely used in stores.[31]

  As outlined in section 4.4(a) above, the Swiss consumer protection authority has filed a complaint with the Swiss competition commission in relation to Apple's refusal to grant Twint access to the iPhone's NFC technology.[32]

5.5 Investments in NFC-enabled technology may not be fully or efficiently realised

Australian banks and large retailers have played a key role in the implementation and acceptance of NFC payment technologies in Australia. They have invested millions of dollars not just in the underlying technology (ie, NFC-enabled terminals), but also in consumer education and marketing. Without the authorisation, Apple's entry into the Australian market with Apple Pay will be effectively free-riding on this investment in NFC infrastructure, which has been made on an open and inclusive basis to improve the payments experience for all Australian consumers. Many competitors to the banks have equally benefited from this open and inclusive system, with companies such as Tyro Payments describing NFC technology as "the only available and highly secure connectivity option that is ubiquitously available across the entire card payment

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[29] Gary Ng, *iPhone in Canada*, 'Suretap Wallet to Shut Down in August, Lays Partial Blame on Apple', 14 July 2016, available at: http://www.iphoneincanada.ca/carriers/suretap-wallet-shut-down/ (accessed 29 September 2016).

[30] Twint, FAQs, 'Why is beacon technology used rather than NFC?', available at: https://www.twint.ch/en/support/faq/ (accessed 29 September 2016).

[31] *Finews*, 'Apple Pay arrival unseats Swiss competition' July 2016, available at: http://www.finews.com/news/english-news/23608-apple-pay-arrival-unseats-swiss-competition (accessed 29 September 2016).

[32] *Telecom Paper*, 'SKS files Apple m-payments complaint with Weko', 6 July 2016, available at: http://www.telecompaper.com/news/sks-files-apple-m-payments-complaint-with-weko--1152095 (accessed 30 September 2016); Apple, Press Release; Apple, Press Release, 'Apple Pay now available in Switzerland', 7 July 2016, available at: http://www.apple.com/newsroom/2016/07/apple-pay-now-available-in-switzerland.html (accessed 30 September 2016).

infrastructure and terminal fleet".[33] PayPal recently announced that its Android app would be updated to support NFC-based payments.[34]

There is public benefit in the efficient use of the existing payments infrastructure that supports NFC payments, particularly given the significant investment that has been made. In particular, the move to mobile payments and wallets away from plastic cards and physical wallets could result in significant efficiencies in the payments system and for the Australian economy. However, in order to ensure the success of mobile payments, merchants and financial institutions need the right combination of convenience, security and cost. These attributes will only be developed in an environment in which vigorous competition drives innovation, efficiency and continuing investment.

Without authorisation, because of the technical lockout of the iPhone's NFC functionality, the banks and other mobile wallet providers will be unable to develop competing integrated NFC-enabled mobile wallets for iPhone devices. This therefore limits the public benefits that can be derived from the NFC payment infrastructure already deployed and paid for by Australian banks and merchants, as it limits the full potential of mobile wallet and mobile payment adoption in Australia.

Apple's submission states that, instead of using the NFC infrastructure already deployed, banks could invest in alternative payment technologies that Australian customers are less accustomed to, and supportive of, to provide iPhone users "choice" (eg, by investing in QR code based technology which is used in China and the USA and available on iPhone).

Aside from the fact that these alternative technologies do not provide appropriate competition, the suggestion that the banks roll out new POS terminals would lead to inefficiencies as a result of duplication of Australia's payments system infrastructure. The inefficient use of resources is a public detriment that leads to higher-cost payment systems overall (see further discussion in section 5.6 below). It should not be necessary to duplicate this infrastructure, and this investment, in order to give customers a choice in mobile payments regardless of the mobile phone platform they use.

5.6 No opportunity for price visibility or constraint

Without authorisation, the applicant banks (and any other issuer that signs up to Apple Pay) will not be permitted to charge their customers for using Apple Pay, despite the cost of Apple Pay as compared to other payment methods. This means that there will be no opportunity for price visibility to act as a constraint on Apple's ability to charge excessive and uncompetitive fees for Apple Pay. This creates uncertainty and risk in relation to future costs as, once a bank agrees to offer Apple Pay, it is powerless in the face of Apple (a non-regulated entity within the four-party payment system) changing its per transaction pricing, as it has done in the past with iTunes.

The inability to pass-through fees also has implications of inequitable and inefficient cost recovery from the rest of the system, as the applicant banks will only be able to recover the costs of Apple Pay through cross-subsidisation. This means that Australians who do not use Apple Pay will end up subsidising those who do, which will increase the costs of the Australian payment system overall.

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[33] Tyro, 'Choice and innovation stopped without free NFC', 8 August 2016, available at: https://tyro.com/blog/business-choice-and-innovation-stopped-without-free-nfc/ (accessed 29 September 2016).

[34] Mobile Payments Today, 'PayPal embraces NFC', 23 February 2016, available at: http://www.mobilepaymentstoday.com/news/paypal-embraces-nfc/ (accessed 29 September 2016).

Therefore, absent the ability for the issuer banks to pass-through the costs of using Apple Pay, all Australians will end up paying for the higher price of the Australian payments system.

Further discussion of the implications of the lack of fee transparency is provided in section 9 below.

5.7 Uncertainty as to the applicability of security and fraud protection standards

Without authorisation, there is also a risk that security standards that otherwise apply to cards and card payments offered by Australian banks will not be available to all customers using Apple Pay. This is addressed in detail in section 8 below.

6 Authorisation is not about "blunting" or delaying Apple's entry into the Australian market

6.1 Overview of Apple's contentions

Apple's submission suggests that the purpose of the authorisation is to delay Apple Pay's entry into the Australian market:

> *Apple is concerned that the applicant banks may attempt to use collective bargaining/boycott to blunt Apple Pay precisely because they want to control the direction and pace of innovation and advantage their own mobile wallets. Obtaining authorisation for the present application may make it easier for the applicant banks to slow this innovation and disruption by delaying the introduction of Apple Pay to a large proportion of Australian cardholders, to the detriment of the applicant banks' own customers…*
>
> *The proposed collective bargaining/boycott would slow innovation and reduce choices by protecting the applicant banks from competition with each other and from Apple for the next three years. The applicant banks would have little incentive to compete amongst themselves to develop the best and most innovative presentment methods for their customers.*[35]

These assertions do not withstand any scrutiny. The applicants wish to offer their customers a choice of mobile wallet and mobile payment apps that would necessarily include Apple Pay. There is intense customer demand for Apple Pay, and the international experience has shown that few issuers find it commercially viable not to participate in Apple Pay for long. However, the applicants recognise that the opportunity they have to promote NFC-based competition in mobile payments will be lost as soon as they sign up to Apple Pay on Apple's current terms. The applicants wish to offer their customers a choice between various mobile wallets that they could load onto their mobile phone (regardless of the handset manufacturer), so that the customer can select the mobile wallet that best meets their needs.

6.2 The applicants have every incentive to introduce Apple Pay as soon as possible

The applicants are seeking to collectively negotiate with Apple so that they can provide their customers with a meaningful choice in mobile wallets and mobile payments, and can continue to innovate and compete with each other and with third party wallet providers. They are not seeking to gain an unfair advantage for their own mobile wallets, only to give those wallets a chance to compete on their own merits.

[35] Authorisation applications A91546 & A91547, Submission by Apple, 26 August 2016, section 2.3.

Apple's economist has also raised the possibility that the banks' preferred positions may be insufficiently aligned to reach a speedy conclusion to the negotiation:

> *[I]f the strategic interests of the cartel members are not sufficiently aligned, the combination of cooperative negotiation and a collective boycott could prevent any agreement between the Applicants and Apple (assuming that any agreement was even possible under the circumstances) or might result in an agreement that some of the cartel members would view as suboptimal. In other words, the collective boycott element of the conduct proposed to be authorised would, all else equal, promote holdup behaviour among the cartel members.*[36]

However, the limited scope of the collective negotiation, combined with the commercial pressures on the banks to conclude the process and participate in Apple Pay – and the risk of any of the applicants moving to sign up with Apple Pay ahead of the others, like ANZ Bank did – make this hold-up unlikely.

The applicants know that their customers will choose which mobile wallets and mobile payments they prefer. Each applicant is aware that a number of its customers have signed up for payment cards with American Express and ANZ Bank in order to use Apple Pay, and will continue to do so unless and until it offers Apple Pay. The overseas experience confirms that banks who are seen to delay their participation in Apple Pay have been the subject of complaints through social media and in the press – for example in relation to HSBC and Barclays in the UK.[37]

As a result of these pressures, it is clearly not in the applicants' commercial interests to delay their participation in Apple Pay, and they have every incentive to ensure that the collective negotiation process is resolved as soon as possible.

6.3 The applicants propose an expedited negotiation process

There is no basis for Apple to argue that authorisation would delay competition or innovation for three years. While the authorisation is sought for that period, the active phase of collective negotiation is likely to be limited (and the collective boycott is only in place while the relevant collective negotiation is ongoing). In practical terms, this period is likely to take months (not years). Further, given the pressures on all of the banks to offer Apple Pay to their customers, the applicants have a strong incentive to ensure that the negotiation period is as short as possible.

The collective negotiation and boycott sought are limited to three issues. All other aspects of an agreement with Apple will be individually negotiated. Whether a bank decides to introduce Apple Pay and the timing of that introduction will not be in "lockstep", but will depend on each bank's individual negotiations. In addition, while all participants in a collective negotiation are expected to remain within the negotiating group for the period of negotiation, in practice there is no penalty for leaving the negotiating group and there is little to prevent one or more banks signing up with Apple Pay before the negotiation period is over. This is an additional incentive for the applicants to conclude negotiations within the shortest possible time.

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[36] Pleatsikas Report, 24 August 2016, [24].

[37] Mary-Ann Russon, *International Business Times,* 'Apple Pay UK: No mobile payments for HSBC customers until late July but Barclays is on board', 14 July 2015, available at: http://www.ibtimes.co.uk/apple-pay-uk-no-mobile-payments-hsbc-customers-until-late-july-barclays-board-1510750 (accessed 29 September 2016).

The applicants therefore expect that the collective negotiation process will proceed expeditiously and be resolved in a timely manner. Further details on the applicant's proposed negotiation framework are set out in **Annexure A**.

7 Providing access to the NFC functionality will not undermine the security of Apple Pay

7.1 Overview of Apple's contentions

The applicants submit that collective negotiation with a view to allowing competing apps to access the NFC payment functionality on mobile devices has the potential to increase competition and innovation for the benefit of consumers. In its submission before interim authorisation, Apple argued that the applicants wished to:

> *force Apple to undermine the security of its mobile payment service by opening access to the NFC antenna, placing at risk the consumer experience of a simple, secure, and private way to make payments in store, within applications, or on the web.*[38]

Apple's initial submission further said that:

> *Providing simple access to the NFC antenna by banking applications would fundamentally diminish the high level of security Apple aims to have on our devices.*[39]

In its lengthier submission before draft determination, Apple expands on its position as follows:

> *Much of the applicant banks' application relates to their desire to have direct access to the NFC antenna contained in Apple devices. This is not open to negotiation with any bank… Apple does not provide banks access to the NFC radio because doing so would undermine the security our customers expect when using Apple devices to make payments.*[40]

Apple's claim that access to NFC functionality would somehow undermine security fits well with Apple's marketing strategy and its commercial objectives of blocking access to competitors to Apple Pay, but is not supported by any facts and it is questionable for a number of reasons as discussed below.

7.2 Other technology companies offer access to NFC without compromising security

Apple's "evidence" is limited to the following references to Android Pay and Samsung Pay:

> *Indeed, Android devices, which provide open access to their NFC radios to banks, have been shown to be susceptible to third party attacks that can compromise the customer's card information. There have also been reports of non-NFC security issues related to Samsung Pay, which is why it is so important to Apple to maintain the tight integration of our hardware, software, and services such as in Apple Pay.*[41]

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[38] Authorisation applications A91546 & A91547, Submission by Apple, 4 August 2016, p 2.

[39] Authorisation applications A91546 & A91547, Submission by Apple, 4 August 2016, p 3.

[40] Authorisation applications A91546 & A91547, Submission by Apple, 26 August 2016, section 4.2.

[41] Authorisation applications A91546 & A91547, Submission by Apple, 26 August 2016, section 4.2. Apple's submissions reference the following websites: http://www.idigitaltimes.com/new-android-nfc-attack-could-steal-money-credit-cards-anytime-

While Apple does not go so far as to say that Android devices are susceptible to these attacks *because* they provide access to their NFC antennas, it invites the ACCC to draw such a conclusion. While such a potential vulnerability does appear to have been demonstrated in highly controlled conditions, it is not at all clear that the vulnerability Apple is referring to has anything to do with the provision of third party access to Android's NFC functionality.

Indeed, Apple acknowledges that reported security issues related to Samsung Pay have nothing to do with NFC functionality, but arise from the emulation of older magnetic stripe technology provided by some Samsung phones. It is not clear how this demonstrates that it is important that Apple exclude competitors from the iPhone's NFC functionality. Again, this is a theoretical vulnerability and there has been no report of mobile NFC payments actually being compromised in everyday use.

Issuers and card networks throughout the world have signed onto Android solutions and certified the devices that employ them without expressing any concern about the access that Android provides to its NFC functionality. While all mobile platforms are subject to attacks and vulnerability,[42] this does not mean that any of them are insecure in a practical sense, whether or not they provide third party access to their NFC functionality.

7.3 Level of access

Apple appears to be concerned that the potential for "simple access" or "direct access" to NFC functionality would compromise security on the iPhone. While the level and nature of any access to NFC functionality are intended to be the subject of collective negotiation, the applicants expect that the access provided would not – and should not – be "simple" or "direct" in the sense of low-level access to the underlying hardware.

Rather, the applicants would expect a level of access comparable to the access Apple already provides to a myriad of iPhone hardware and software features such as the accelerometer, Keychain (stored passwords), Touch ID (fingerprint sensor) functionality and perhaps most relevantly the iPhone's Bluetooth functionality. The most recent iOS update extended access to one of the most basic features of calling functionality.

Apple implements the Bluetooth Low Energy specification through a framework that allows apps to connect and communicate directly with Bluetooth-enabled devices. These apps can already be used for mobile payments (provided compatible devices have been installed by merchants) and it is not clear that NFC functionality is inherently more vulnerable than Bluetooth when it comes to providing third party access. If anything it should be less vulnerable, as NFC only operates across a field of around 4 centimetres, while Bluetooth has a theoretical range of up to 100 metres.

Again, the applicants would expect that, if Apple were to provide access to its NFC functionality, it would do so in a way that would meet its own security standards. For example, the potential vulnerability Apple has identified with open access to the NFC functionality on Android appears to rely on:

- the ability to use the Android device as an NFC payment card reader; and

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your-phone-near-445497; http://www.informationweek.com/wireless/nfc-phone-hacking-and-other-mobile-attacks/d/d-id/1105508?.

[42] Including for example Apple with the recent three high-severity iOS vulnerabilities that were being actively exploited to infect iPhone. See: Dan Goodin, 'Actively exploited iOS flaws that hijack iPhones patched by Apple', 26 August 2016, available at: http://arstechnica.com/security/2016/08/actively-exploited-ios-flaws-that-hijack-iphones-likely-spread-for-years/ (accessed 29 September 2016).

- a user downloading and installing a “poisoned app” on their device.

To reduce this vulnerability, Apple may wish to limit the use of the NFC functionality to making payments only (as opposed to using the iPhone for *reading* contactless cards). Apple already prevents customers from installing apps from sources other than its App Store and reviews all apps thoroughly before making them available for download. It is difficult to imagine that Apple would approve an app that used the iPhone’s NFC functionality to compromise card details.

7.4 Multiple cards and wallets

The applicants understand that, on any mobile device, only one tokenised payment credential can be nominated as the “live” or current payment credential, so that when a mobile device is tapped against an NFC terminal, only that payment credential (ie, the selected or “default” card) is presented and digital “card clash” is avoided.

“Card clash” occurs in the real world when multiple contactless plastic cards are presented to a contactless reader at once, for example in the same physical wallet, and the reader may either “choose” a card on an unpredictable basis or refuse to process the payment. Mobile NFC systems avoid this issue by only presenting one payment credential at any time (and the mobile phone only has one NFC antenna). However, the clash issue would still arise in the case of an NFC-enabled mobile device that also had an external NFC sticker attached to it.

This is one reason why external NFC stickers are not an effective alternative to integrated NFC functionality: it would not be possible for a customer to use both Apple Pay (through the iPhone’s integrated NFC functionality) and a banking app that relied on an external NFC sticker attached to the iPhone, because of card clash.

Of course, Apple Pay allows users to register multiple cards and provides users with a simple and intuitive mechanism for choosing both:

- which of those cards will be the default card; and

- which of those cards will be used for the current payment transaction.

That is, Apple provides a governance mechanism for selecting which payment credential token will be transmitted the next time a payment is initiated. Whenever an iPhone is brought within range of an NFC payment terminal, Apple’s Wallet app will launch (if it has not already been launched by the user) and the user is able to pay immediately using their default payment credential or to select another credential before paying.

The applicants appreciate that allowing third party access to NFC functionality would require an expansion of the governance mechanism to identify first which app or wallet would be launched, and then which payment credential would be presented by the chosen app.

This is the governance mechanism used successfully by Android. On an Android device, any number of payment and other apps may access the NFC functionality to communicate with other NFC devices. Payment apps may be secured using an embedded secure element, a SIM-based secure element or a cloud-based secure solution such as host card emulation (**HCE**).

These apps can all coexist on a single Android device and make use of the same NFC functionality due to a simple governance mechanism. A similar governance mechanism could be developed for the iPhone.

7.5 Granting access will not compromise the user experience

If Apple were to grant access to the iPhone's NFC capability, Apple Pay would remain the only mobile wallet or payment app installed by default on the iPhone, and the user experience for customers who did not choose to download a competing app would remain entirely unchanged. Users who preferred Apple Pay to other alternatives would be free to use it – and to load cards issued by any participating issuer, including all the banks who participated in a successful collective negotiation – and to take advantage of the simplicity of a single mobile wallet.

Only those users who chose to download one or more banking or other payment apps would find their experience altered. These users could continue to use Apple Pay, and would be able to load the same or different payment credentials into both Apple Pay and into another mobile payment app, where the same credential would be represented by different tokens in the different wallets. Additional consumer-benefiting features, utilising smart phone features such as location based card preferences, are also potentially possible.

It is likely that many customers will continue to use Apple Pay either exclusively or as their primary NFC payment app – particularly as the latest version of Apple's operating system repeatedly prompts customers to load a payment credential into Apple Pay when they upgrade or set up an iPhone and at regular intervals afterwards – just as most customers use Apple's default mail, camera and browser apps.

However, to assume that no other developer could make use of the iPhone's NFC functionality in a way that provides additional value to customers, even within the consistent look and feel outlined in Apple's Human Interface Guidelines, is to ignore the thousands of apps that have done exactly that.

There are successful apps that compete directly with every one of Apple's default apps, covering e-mail, calendar, notes, contacts, messaging, videoconferencing, recording, web browsing, music, document creation, camera, maps, compass, fitness, stocks, weather, voice assistance and other functions. These apps use the iPhone's hardware and operating system in ways that challenge Apple's own apps and inspire them to improve. There is no reason to think that competition and customer choice would not have the same impact in mobile payments.

7.6 Apple has the ability to grant access to the NFC hardware/API

It has been reported that the hardware Apple uses to provide NFC functionality is based on standard hardware manufactured by NXP Semiconductors (the co-inventor of NFC technology along with Sony) and made available to all mobile device manufacturers. There is no technical reason why this hardware would prevent access to the NFC functionality on Apple devices, given that identical hardware demonstrably allows that access on Android devices.

While this hardware is subject to the standards and limitations inherent in NFC technology – for example being limited to one active card token at any one time – there is absolutely no evidence that providing access to the iPhone's NFC functionality would

require Apple to "completely overhaul the architecture of its hardware and operating system".[43]

As discussed above, Apple would need to create a governance system to determine which app would be the default NFC payment app, and each app would need its own mechanism to decide which card to present within the app – always determined according to the user's preference. However, it is difficult to see how this would be a significant overhaul compared to the other changes to iOS that are made every year, which frequently provide access or increased access to a range of hardware features, and given that a functional governance system for NFC has already been successfully achieved on the Android operating system.

8 Negotiation on security will benefit consumers

8.1 Overview of Apple's contentions

Apple has listed a number of concerns in respect of the applicants' proposal to collectively negotiate in relation to security issues. Broadly, these concerns fall into two categories:

- concerns associated with the concept of a collective negotiation; and
- concerns associated with some of the specific requirements that Apple believes it will be subject to if collective negotiation is allowed.

Each of these areas is addressed in more detail below.

8.2 Why the applicants are seeking to collectively negotiate with Apple on security

Apple alleges that the applicants are attempting to use fraud and security as a rationale for creating obstacles for third party wallet providers to enter and expand in Australia. However, Apple's allegations conveniently ignore the history of security issues that have arisen in relation to Apple Pay, and the efforts that have been made to address those issues in other jurisdictions.

In particular, there were a number of reports of high rates of fraud associated with Apple Pay soon after its launch in the US (which, according to one report, was as high as 6%, compared to 0.1% for swipe card transactions).[44] According to these accounts, the problems experienced with Apple Pay in the US stemmed from inadequate customer ID&V processes at the time of "on-boarding" card details into the wallet. This in turn stemmed from the incentives of Apple (and perhaps some payment card issuers) to make "on-boarding" as simple as possible for iPhone device users in a context in which issuers were "desperate to become their customers' default card on Apple Pay" and consequently "did little to build their own defences or to push Apple to provide more detailed information about its customers".

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[43] David Glance, *The Conversation*, 'Why the ACCC siding with the banks against Apple will not be in consumers' interests', 22 August 2016, available at: http://theconversation.com/why-the-accc-siding-with-the-banks-against-apple-will-not-be-in-consumers-interests-64220 (accessed 30 September 2016).

[44] Daisuke Wakabayashi and Robin Sidel, *Wall Street Journal*, 'Fraud Comes to Apple Pay', 3 March 2015, available at: http://blogs.wsj.com/digits/2015/03/03/fraud-comes-to-apple-pay/ (accessed 30 September 2016); pymnts.com, 'Spike in Fraud has Experts Doubting Apple Pay',, 25 March 2015, available at: http://www.pymnts.com/news/2015/spike-in-fraud-has-experts-doubting-apple-pay/ (accessed 30 September 2016); and Andrew Ross Sorkin, *New York Times*, 'Pointing Fingers in Apple Pay Fraud,' 16 March 2015, available at: http://www.nytimes.com/2015/03/17/business/banks-find-fraud-abounds-in-apple-pay.html (accessed 30 September 2016).

These concerns lead to the Canadian banking industry making a concerted effort to put up a coordinated front against Apple in an attempt to ensure that, when Apple Pay was launched in Canada, 'secondary authentication' would be available.[45] As outlined in section 4.4(a) above, the Canadian banks formed a consortium and, together with consultancy firm McKinsey & Co, published the Canadian White Paper that was concerned with security risks associated with the introduction of open mobile wallets that hold credentials from multiple issuers.[46] In particular, the Canadian White Paper identified the following concerns association with customer ID&V in open wallets where the issuer relinquishes control to the wallet provider (as was the case for Apple Pay in the US):

- an open wallet that provides the highest level of transaction security can still present fraud risk if the identity of the customer requesting the initial provisioning of the card into the wallet is not confirmed;

- card issuers are best positioned to undertake customer ID&V and determine where to approve a request to provision a card into a mobile wallet because of their relationship with the customer and because they are liable in the case of account takeover fraud; and

- weak ID&V at a single issuer could potentially undermine consumer and merchant confidence in, and the integrity of, the overall payment system.[47]

In Australia, APCA undertook a similar effort which resulted in the publication of the "Third Party Digital Wallet Security: Card Issuer Guidelines" (**Guidelines**). The Guidelines were published in May 2016.

In this context, it is disingenuous to present the applicants' concerns around security as motivated by a desire to block Apple Pay's entrance into the Australian market. Rather, these concerns arose from broader (and widespread) concerns around weaknesses in the way Apple Pay had been implemented in the US, which weaknesses were feared would be replicated in other jurisdictions (given Apple's reputation for inflexibility and for imposing "take it or leave it" commercial terms when negotiating).

8.3 Concerns associated with specific security requirements

(a) Collective negotiation will not impose on Apple security obligations that do not already apply to the applicants

Apple has also raised some specific concerns around the fact that the Guidelines would only apply to third party wallets (but not to the applicants' own wallets), and the fact that collective negotiation would not be effective in bringing the best solutions to fraud and security concerns in the Australian market.

While the Guidelines themselves provide an explanation as to why they were designed to only apply to third party wallets,[48] the applicants have also sought to address this concern

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[45] Secondary identification is a form of verification whereby customer information is required by the issuing bank before a card can be provisioned into Apple Pay.

[46] Payments Security White Paper, 13 July 2015, p 1.

[47] Payments Security White Paper, 13 July 2015, pp 24-5.

[48] See Section B: "The Guidelines have not been drafted to apply to Card Issuers' proprietary mobile banking applications or proprietary wallet services, being those provided by a Card Issuer solely for its own customers. The responsibility for managing fraud and security of proprietary wallet services, and the liability for, and reputational risk associated with, losses resulting from use of proprietary products, rests entirely with the Card Issuer. A Card Issuer may choose to apply aspects of these Guidelines to its proprietary mobile banking applications and wallet services where appropriate".

by clarifying that collective negotiation in relation to security requirements for Apple Pay would be on the basis of achieving (as a minimum) the same level of security that the applicants offer their customers in respect of their own payment products (mobile or not) – see **Annexure A**.

Apple has also noted that Apple Pay already allows the banks to control decisions in relation to ID&V and card provisioning. If this is correct, then it would be expected that the scope of collective negotiations in relation to security issues will be greatly simplified (and it would be expected to proceed quickly as a result).

(b) Collective negotiation will not stifle innovation

Apple also alleges that collective negotiation will be a "one-size-fits-all" approach that will remove the incentive for wallet providers to develop more innovative solutions to distinguish themselves from other wallet providers.

The proposed framework for negotiation in **Annexure A** does not limit Apple (or the applicants) if there is a desire to offer additional security features to differentiate particular products from competitors – it simply seeks to ensure that all cards loaded into Apple Pay (and the associated payments) enjoy a minimum level of security that has proven effective in controlling fraud rates in the Australian environment.

However, fraud prevention measures are constantly evolving (as is fraud itself), and it is expected that Apple, the applicants and the payments industry will continue having to evolve in order to anticipate and respond to new types of fraud as they arise. The proposed framework for collective negotiation will not prevent that evolution.

(c) Collective negotiation will not prevent the use of tokenisation

Apple has claimed that the proposed Guidelines would allow the banks to decide whether to use tokenisation. This is a misrepresentation of the facts.

Tokenisation is not a security feature unique to Apple Pay payments. Rather, tokenisation is a security mechanism that has been implemented as part of a world wide effort to minimise fraud. The approach is widely used by card schemes around the world and the applicants have been using it in Australia for years (alongside other security measures such as EMV cards).

In this context, the applicants wish to collectively negotiate so as to ensure any tokenisation requirements imposed by Apple are consistent with obligations already agreed by the applicants with card schemes. The negotiation framework set out in **Annexure A** is consistent with this aim.

(d) Collective negotiation will not require Apple to store information it does not currently store

Apple has also claimed that the Guidelines would require Apple to store certain user and transactional data (and that compliance with these requirements would compromise security in Apple Pay payments).

The source of this concern is unclear, but in order to provide clarity, the proposed negotiation framework in **Annexure A** sets out a very narrow set of circumstances where Apple may be asked to provide information to the applicants (on the assumption that such information would be available). Nothing in the negotiation framework would require Apple to collect information that it does not collect now, or would impose an obligation to provide information it does not hold.

8.4 No delay expected in respect of collective negotiations on security issues

Both the applicants and Apple agree that security, fraud prevention and privacy are critical to customers adopting mobile wallets. To the extent there has been uncertainty as to what the applicants are seeking to achieve in this regard, the proposed negotiation framework in **Annexure A** is expected to provide clarity, prevent delay and avoid the risk of any holdup on negotiations. To the extent that collective negotiation will ensure that common security will be available to all applicants on a standardised basis, the process will provide public benefits with minimum risk of detriment.

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9 Restriction on pass-through prevents price visibility and Apple Pay fee constraint

9.1 Overview of Apple's contentions

In its submission, Apple states that it is not in the public interest to allow banks to "collude for the purpose of charging customers for using Apple Pay" because:

- Apple's fees reflect the investment made by Apple in offering Apple Pay and the benefit to be derived by the banks;
- customers are not currently charged transactions fees for making purchases using other "mobile wallets", nor are they told about or charged other fees for credit card use;
- banks are free to not agree to pay fees to Apple Pay and develop their own mobile wallets;
- the arguments put forward by the applicants in support of passing on of fees to consumers misconstrue prior analysis of these issues by the RBA; and
- banks have an incentive to favour their own mobile wallet services by charging higher fees if consumers choose Apple Pay.

These arguments reflect a number of misunderstandings, as set out below.

9.2 The applicants are not trying to collude on fees

Apple alleges that the applicants are trying to "collude" for the purposes of charging customers for using Apple Pay. This is plainly incorrect.

To be clear, the purpose of the collective negotiation is *not:*

- to agree on the level of any fees that any applicant may wish to charge its customers for using Apple Pay; or
- to agree on the decision to charge any such fees.

The purpose and scope of the proposed collective negotiation is much narrower. The applicants want to collectively negotiate so that each bank can make its own individual decisions as to whether any fees should be charged at all (and, if so, the level of any such fees).

The need for such collective negotiation arises in a context where, as Apple's own submission states, Apple "requests" that the banks do not pass on to consumers any fee if they offer Apple Pay. Apple states it wants zero fees for Apple Pay because it "is trying

to attract new users and does not wish to be competitively disadvantaged". In a practical sense, while it would be difficult for Apple to be competitively disadvantaged where it can stop competition by enforcing a technical lockout on NFC functionality, Apple's zero fee policy reinforces its position of dominance in mobile wallets and makes it even harder for others to compete even with complementary products. While Apple wants to make sure there is no price competition between each applicant and Apple, in effect its zero fee policy also eliminates price competition for the supply of Apple Pay between banks.

Therefore, in this particular context, the collective negotiation operates as the exact opposite to an attempt to collude on fees.

9.3 The existence or otherwise of benefits to issuers from Apple Pay is irrelevant to the assessment of whether the ability to pass-through Apple's fees results in benefit

Apple submits that the fees it negotiates reflect the investments made by Apple in offering Apple Pay and the benefits that card issuers will derive from participating in Apple Pay.[49] However, Apple has not made clear exactly what the benefits of Apple Pay to issuers are over and above contactless cards and other integrated mobile wallets. For example, many of the claims made by Apple in relation to enhanced security really relate to enhanced security in the US context of a move from payment by cards with mag stripe rather than the Australian context where tokenisation is already in use and movement is from contactless NFC "tap & go" payments to mobile payments via NFC.

Moreover, any such benefits do not remove the benefits of removing the restriction of pass-through. As noted by CRA in their response to Dr Pleatsikas' Report:

> *In any event, even if there are positive benefits for issuers of use of Apple Pay instead of alternative payment methods, this does not alter our conclusion that, if Apple maintains exclusivity for Apple Pay on iOS devices, Apple's fees would likely be excessive, as they would likely exceed the level that Apple would be able to sustain if facing competition from other integrated mobile wallets on iOS devices. In this sense, the existence or otherwise of benefits to issuers from Apple Pay is irrelevant to the assessment of whether Apple's fees are likely to be excessive. Moreover, if there are benefits of Apple Pay for issuers, although 100% pass-through may not be efficient, some pass-through (somewhere between 0% and 100%) would be, where the efficient pass-through would reflect the difference between Apple's fees and the benefits to issuers.*[50]

9.4 Pressure to avoid large (and increasing) future losses, may lead to issuers agreeing to terms that are inefficient and result commercial detriment

Apple's submission regarding "benefits" to issuers also ignores the context of the commercial environment in which banks across the world have entered into agreements with Apple in relation to Apple Pay and the potential detriments from bargaining disparity leading to inefficient outcomes.

Apple's dominant position in the Australian smartphone market means that banks which do not agree to Apple's onerous terms of supply are likely to face increasing losses over time as their customers switch services to banks that do support Apple Pay services. In order to avoid these large (and increasing) future losses, banks may agree to terms of supply from Apple even if doing so causes them commercial detriment.

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[49] Authorisation applications A91546 & A91547, Submission by Apple, 26 August 2016, section 4.4.

[50] Response to Dr Pleatsikas' report prepared by CRA.

There are formal economic models of bargaining which are applicable to this situation. These models describe the outcomes in bargaining situations involving a single supplier and multiple potential customers where agreement to the supplier's terms by one customer creates negative outcomes for the customers that are yet to reach agreement.[51] The key result from these models are that bargains reached in such situations result in significant transfer of profits from the customers to the supplier; in fact the customers can be worse off after reaching agreement than they were before doing so, because by entering into the agreement they avoid future losses which are even larger.

The key conditions for these models to apply are present. In particular, customers do not choose their phone based on mobile wallet capabilities (see section 4.2(b) above). This means that a bank which does not support Apple Pay will face increasing losses over time as its customers that use Apple handsets will look to move services to another bank that does offer Apple Pay. Given that iPhone customers make up a very large and particularly valuable segment of the bank's customer base, this creates pressure on each individual bank to not hold out longer than the other banks, which in turn creates an incentive to accept detrimental conditions of supply from Apple.

If the collective negotiation is authorised, the dynamic of the negotiation will change. This is because none of the banks that stay as part of the collective negotiation process will face the prospect of experiencing a negative outcome as a result of another bank participating in the collective negotiation reaching agreement with Apple (although note they will also face the risk of one party leaving the negotiation early – but this in turn creates incentives for the banks to complete negotiations as expeditiously as possible). This will allow for normal commercial negotiations to proceed.

Under the proposed negotiation framework, negotiations about the fees payable by each applicant will still be a matter left to bilateral negotiation between each individual bank and Apple (and a decision to charge any fees and the level of any such fees would also be an individual matter). However, Apple will not be able to force the banks to absorb all of the costs of offering Apple Pay by imposing onerous "take it or leave it" terms that the banks will be compelled to accept in order to avoid the prospects of significant losses over time.

9.5 The authorisation is about the *ability* to pass-through fees given the efficiency, distributional and competitive impacts of a restriction on that ability – other mobile wallets do not restrict pass-through

Apple contends that the banks should not pass on fees to their customers who elect to use Apple Pay because customers are not currently charged transaction fees for making purchases using other "mobile wallets" or using scheme cards.[52]

In making this argument, Apple has failed to recognise the important distinction between: (a) the banks having the ability to charge a fee and reaching a decision not to; and (b) what Apple is seeking to do in relation to Apple Pay, which is to prohibit the banks from charging any fee to customers for the use of Apple Pay.

As discussed further in section 9.7 below, the ability of banks to threaten to pass-through costs to consumers (as opposed to the question of whether or not they actually choose to

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[51] For example, Segal, I. (1999) 'Contracting with Externalities' *Quarterly Journal of Economics*, 114: 337-388; Segal, I. and Whinston, M. (2003) 'Robust Predictions for Bilateral Contracting with Externalities' *Econometrica*, 71: 757-791; Genicot, G. and D. Ray (2006) 'Contracts and Externalities: How things fall apart' *Journal of Economic Theory,* 131: 71-100.

[52] Authorisation applications A91546 & A91547, Submission by Apple, 26 August 2016, section 4.4.

do so) has important implications for competition and economic efficiency in the Australian payment systems as it acts as a competitive constraint on Apple's ability to extract excessive and uncompetitive fees from the banks for providing Apple Pay. The ability to pass-through costs is also important in a context where mobile payments are a new area and technology and commercialisation models are rapidly evolving.

9.6 The applicants are not "free" to reject Apple Pay and develop their own competitive alternatives because of Apple's technical lockout of the NFC functionality

Apple has stated that if the banks are not willing to pay the fees that Apple is prepared to negotiate, then the banks are "free" not to do so and to develop "alternative presentment methods" for its customers.

As discussed elsewhere in this submission, this statement is highly disingenuous: without access to the NFC functionality on the mobile phone, the applicants are not in a position to compete for iPhone customers or successfully compete in mobile payments, and there are numerous examples around the world to show precisely that (see sections 5.3 and 5.4(b) above). It is also audacious of Apple to suggest that Apple should freely benefit from the investment that Australian banks and merchants have made in NFC terminals, but the applicant banks themselves should not (and should, instead, invest in new technology). This inefficient use of resources would be a public detriment that leads to higher-cost payment systems overall (see further discussion in section 9.7 below).

9.7 Issues of transparency and RBA policy

Apple has stated that its desire to make sure customers do not pay fees to use Apple Pay is different from the "no surcharge" rules that were historically imposed by credit card schemes on the basis that:

- the credit card scheme's no surcharge rules applied to merchants (not to the issuing banks); and
- the banks have not shown that customers would end up paying more if the banks cannot charge customers fees to use Apple Pay.

Both these statements are overly simplistic and misunderstand the nature and intention of the RBA policy on payment systems reform.

(a) RBA's policy in relation to price transparency and surcharges

The RBA's criticism of no surcharge rules was driven by a concern to improve competition and economic efficiency in the Australian payment systems by providing better price signals on the relative costs of different payment methods.[53] The RBA considers that:

> *… 'no surcharge' rules suppress price signals that guide the efficient allocation of resources. They result in cross-subsidisation of cardholders by consumers who do not use credit cards; they restrict competition between merchants by limiting the range of pricing strategies they can use; and they prevent end-users exerting competitive pressures on merchant service fees and interchange fees.*[54]

[53] RBA and ACCC, 'Debit and Credit Card Schemes in Australia: a Study of Interchange Fees and Access', October 2000, Executive Summary.

[54] RBA and ACCC, 'Debit and Credit Card Schemes in Australia: a Study of Interchange Fees and Access', October 2000, p 50.

The RBA is here referring to the fees charged by a *merchants* to the customer, while Apple's rules apply to fees charged by the *card issuer* to the customer, but the same considerations apply: either the customer contributes to the cost of processing the payment, or all customers will have to contribute, whether they use the payment method or not. Accordingly, the RBA's criticisms are equally applicable to Apple's policy on zero Apple Pay fees, as shown on Table 2 below.

Table 2: No surcharge rules vs Apple's "zero Apple Pay fee" policy

Detriments	No surcharge rules	Apple's "zero Apple Pay fee" policy
Distorted price signals	Masks price signals to cardholders about the relative cost of different payment methods.[55] Distortions to price signals may lead to overuse of some payment methods; and relative prices that do not reflect relative resource costs of different payment systems are likely to lead to a higher-cost payments system overall.[56]	Masking the cost of Apple Pay similarly distorts price signals about the cost of using it. If customers are led to believe that Apple Pay is "free" then this may lead to overuse of Apple Pay as compared to lower-cost payment methods. This is problematic in circumstances where the more customers who use Apple Pay, the more it will cost the issuing banks who are offering the service and can lead to higher-cost payments system as a result of cross-subsidisation (addressed below).
Cross-subsidisation	No surcharge rules contribute to the subsidisation of credit card users by all other customers, as merchants would build the costs of accepting card payments into the overall prices of their goods and services, which were paid by all customers regardless of the payment method they used.[57] The ability of merchants to levy surcharges reduces the extent to which users of lower-cost payment methods subsidise users of higher-cost methods.[58]	If banks cannot pass-through fees for using Apple Pay to customers who use that service, the banks' overall cost base for issuing cards will increase due to the fees Apple charges issuers. Once the cost of Apple Pay is built into the banks' overall cost base, these costs are typically recovered in the form of higher fees (eg, higher fees for card membership). As a result, customers who do not use Apple Pay end up paying for those who do (even if they are not aware of it).
Negotiation of fees	No surcharge rules limit the ability of merchants to put downward pressure on their merchant service fees and interchange fees by threatening to charge the customers	If Apple Pay fees cannot be passed through to consumers, then Apple will not be constrained by the threat of pass-through of fees to consumers in the negotiation of the

[55] RBA and ACCC, 'Debit and Credit Card Schemes in Australia: a Study of Interchange Fees and Access', October 2000, p 55; RBA, 'Review of Card Surcharging: A Consultation Document', June 2011 at 2, 5.

[56] RBA, 'Review of Card Payments Regulation Conclusions Paper', May 2016, p 6.

[57] RBA, 'Review of Card Surcharging: A Consultation Document', June 2011 at 2.

[58] RBA, 'Review of Card Payments Regulation Conclusions Paper', May 2016, p 30.

Detriments	No surcharge rules	Apple's "zero Apple Pay fee" policy
	for using credit or scheme debit cards.[59] Removal of no surcharge rules introduces 'normal market disciplines' into negotiations regarding merchant fees.[60]	fee payable. This compounds the impact of distorted price signals and cross-subsidisation as it means that in setting or increasing the fees charged to banks to offer Apple Pay, Apple does not need to consider consumer's willingness to pay fees to use Apple Pay over another payment method.

Collective negotiation will increase the likelihood that banks will have the ability to pass-through costs to consumers. As identified by the RBA in the context of surcharging, the ability to pass-through costs to consumers "promotes efficiency and competition in the Australian payments system" and leads to a "more efficient allocation of resources… which is in the public interest".[61]

(b) Would customers end up paying more?

Apple has also asserted that the banks have not shown that customers would end up paying more if the banks cannot charge customers fees to use Apple Pay. The basis for this assertion is unclear, and suggests a poor understanding of the way in which banks operate. To be clear, banks are corporations which seek to operate profitably for the benefit of customers, shareholders and the stability of the wider banking system. They are not expected to lower their profits for the benefit of competitors such as Apple Pay.

As noted in the expert report of Dr. Susan Athey:

> *Apple Pay effectively imposes an extra intermediary transaction cost (the Apple Pay transaction tax) on retail transactions, decreasing consumer welfare through higher prices, as follows:*
>
> *a. Total fees per transaction are higher using Apple Pay than using credit cards*
>
> *b. This is equivalent to adding a tax to the system (which accrues to Apple rather than Australian producers)*
>
> *c. Part of the additional fee will be passed on to consumers in the form of higher prices.*

Dr. Susan Athey also notes that:

> *Without collective bargaining and the ability to boycott by the banks, ultimately Apple will likely prevail in its goals of adding an additional "Apple Pay transaction" tax on what may eventually become a large share of all transactions in Australia, as well as in preventing consumers from seeing transparent and accurate signals about the additional tax imposed on this payment mechanism.*

[59] RBA, 'Review of Card Surcharging: A Consultation Document', June 2011, p 2.
[60] RBA, 'Review of Card Surcharging: A Consultation Document', June 2011, p 5.
[61] RBA, 'Review of Card Surcharging: A Consultation Document', June 2011, p 5.

The "Apple transaction tax" will be transferred from Australian consumers to Apple, and the Australian economy will suffer as a result.[62]

9.8 The Applicants are incentivised and constrained by fierce competition between issuers for card and account holders

Apple has contended that if the banks were able to pass-through fees to customers then there is a "real possibility" that the banks would use this as a "competitive tool" to favour their own mobile wallet services by charging higher fees if consumers choose Apple Pay.

Aside from the fact that it is difficult to see how banks could do this if they cannot offer a NFC capable mobile wallet due to Apple's technological lockout, the argument ignores the fact that the banks are subject to competition in both retail banking and in relation to mobile payments.

As outlined in section 9.2 above, the scope of the proposed authorisation does not extend to collective negotiation of the level of fees that any bank may wish to charge to customers for Apple Pay, or to any decision as to whether to charge any such fees at all. Therefore, each bank's ability to charge fees for the use of Apple Pay will be constrained by the fees charged by other banks, including by ANZ Bank who does not appear to charge any fees for Apple Pay (and, as the applicants understand, is contractually unable to charge any such fees). If a customer is unwilling to pay the fees charged by its bank to use Apple Pay, then it is not hard for them to apply for a card from another issuer bank, such as ANZ Bank, which will allow them to use Apple Pay for a zero fee. Cards are not a particularly sticky payment product and 'switching' a card product is all that is necessary in order to access Apple Pay on terms offered by another issuing bank. Therefore, if a bank attempts to extract high fees from its customers for the use of Apple Pay, then it is likely to lose customers to its competitors.

ANZ Bank, in signing up ahead of the applicant banks, was cognisant of the ease with which customers can 'switch' and apply for an ANZ Bank card in order to use Apple Pay. In fact, ANZ Bank is making offers intended to facilitate and encourage 'switching', including the current offer of 0% interest per annum on balance transfers for the first 18 months.[63] The fact that customers have 'switched' to ANZ Bank in order to access Apple Pay[64] is indicative of the ease with which customers could and would switch in circumstances where the banks charged decided to charge its customers too much to use Apple Pay.

10 Apple's submission that authorisation will result in reduced competition and innovation is not supported by the facts

Apple's submission that the level of competition and innovation would be reduced with authorisation is inconsistent with the facts, and in particular with the advanced development of contactless payment options in Australia.

[62] Expert report prepared by Dr. Susan Athey.

[63] See, ANZ, 'Personal credit cards', available at: https://www.anz.com.au/personal/credit-cards/low-interest-rate/platinum/ (accessed 19 September 2016).

[64] For example, see submissions by Richard Thorek (1 August 2016), Jason Discount (17 August 2016), Trevor Long (26 August 2016), Wayne Pulbrook (27 August 2016) and Dr. Grischa Meyer (31 August 2016).

10.1 The authorisation will drive a real competitive response to Apple Pay

According to Apple, if authorisation were granted, consumers would be denied:

> *…the benefits that would flow from the further innovation that would be introduced in Australia by other mobile wallet providers and the banks themselves in response to Apple Pay if introduced by at least some banks.* [65]

However, as noted in section 5.3 above, Apple's submissions on the direction of innovation depend on Apple Pay as the key innovation and other providers developing complementary or non-integrated products on top of Apple Pay for iPhone users and products in response to Apple Pay on Android devices. The restricted response to Apple Pay that Apple seems to be referring to here (ie, complementary non-integrated iPhone apps) would not be prevented by the authorisation and according to other parts of Apple's submission is already occurring.

Far from the authorisation "stifling" the incentive for existing players to develop innovative new solutions that build upon and compete against Apple Pay or "denying" competition or innovation in response to Apple Pay for the next three years, the driving force behind the authorisation is to enable a real competitive response to Apple Pay for Australian consumers.

10.2 The authorisation will not insulate the banks from competition

Apple contends that the limited collective negotiation and boycott would somehow protect the applicant banks from competition with each other and from Apple and would allow banks to control the direction and pace of innovation and the timing of Apple Pay's introduction. This is a misinterpretation of the authorisation being sought.

Further, Apple's contention that the limited collective negotiation would allow the banks to avoid the competitive dynamic generated by the risk of losing customers who would choose a bank that offered Apple Pay, or switch banks in order to access Apple Pay, is inaccurate and unfounded. Apple Pay is already available in Australia and is offered by ANZ Bank and American Express. With or without authorisation, the applicant banks will have to compete for customers with ANZ Bank, one of the largest banks in Australia.

In relation to the timing of Apple Pay introduction, while the authorisation is for a period of three years to allow the applicants and other participants the ability to prepare for, organise and conduct collective negotiations in relation to relevant third party providers, the collective boycott is only in place while the relevant collective negotiation are ongoing. The collective negotiation and boycott sought are limited to three issues. All other aspects of an agreement with Apple will be individually negotiated. Whether a bank decides to introduce Apple Pay and the timing of that introduction will not be in "lockstep", but will depend on each bank's individual negotiations. This, combined with the fact that Apple Pay is already being offered by ANZ Bank, also refutes the suggestion in Apple's submission that the applicant banks would have little incentive to agree terms with Apple in an efficient manner (which is addressed in more detail in section 6 above).

[65] Authorisation applications A91546 & A91547, Submission by Apple, 26 August 2016, section 3.1.

11 The authorisation will result in net public benefit

Apple's contentions regarding the effect of negotiation on exclusivity, restriction on pass-through and security standards are misguided, incorrect and do not substantively address or undermine the case for authorisation.

Authorisation will provide real public benefits to Australian consumers and businesses. Without it, Apple's market power in respect of applications and services for iPhone users and the significant bargaining disparity of Apple will result in individual Apple Pay negotiations leading to inefficiencies and public detriments for the Australian economy.

Apple Pay will be the only choice of integrated mobile wallet available to iPhone users which represent a significant proportion of the consumers that will wish to use mobile wallet technology and the lack of effective competition for providing integrated mobile wallet services to these consumers will likely result in:

- higher prices for mobile wallets;
- lower quality mobile wallets;
- less investment and innovation in mobile wallets; and
- high fees charged by Apple for the use of Apple Pay that ultimately place an inefficient tax on the Australian payment system – a tax that accrues to Apple not Australian producers and will likely be borne inequitably by members not using Apple Pay.

Collective negotiation and the associated boycott will reduce the bargaining power disparity between Apple and the applicants in relation to Apple Pay negotiations and result in net public benefits compared to the counterfactual.

Given the confined nature of the collective arrangements proposed, there are limited public detriments that will arise as a result of the proposed conduct, and substantial detriments that will arise without it.

For the reasons set out in this submission, and supported by the reports of CRA and Dr. Susan Athey, the authorisation will result in net public benefits and should be granted.

Annexure A

Collective Negotiation Framework

1 Scope

Based on the concerns set out in section 2.1 of the applicants' authorisation application, the applicants propose to collectively negotiate with Apple in respect of Apple Pay. At the present time, the applicants do not intend to collectively negotiate with any other third party wallet provider.

2 Areas subject to collective negotiation

The scope of matters to be collectively negotiated with Apple is limited to the areas listed below.

2.1 Exclusivity

In addition to offering Apple Pay, the applicants want to have the ability for their customers to load their own integrated NFC capable mobile wallets that can communicate with the iPhone's NFC functionality in order to make NFC payments.

2.2 Security

The applicants want to be able to collectively negotiate in relation to the following:

- ID&V methods for the provisioning of cards in Apple Pay should have the same level of security that applies to ID&V methods for the applicants' own cards (including when those cards are provisioned on the applicant's own mobile wallets);
- CVM for transactions on Apple Pay should have the same level of security the applicants' apply to transactions made using the applicants' proprietary wallets and EMV cards;
- tokenisation services in Apple Pay should comply with existing obligations the applicants have agreed to with the card schemes;
- applicants should have the ability to request cardholder information in relation to transactions made using Apple Pay if the following conditions are met: (a) the information is reasonably required for the purposes of dispute resolution, fraud and customer complaints; (b) the cardholder has consented to the request and sharing of such information (for the limited purpose of resolving a dispute or conducting a fraud investigation); and (c) Apple already holds the information requested.

2.3 Fees

Each applicant wants to have the ability to make its own individual decisions as to whether to charge cardholders any fees for the use of Apple Pay.

3 Process

3.1 Who can participate?

The applicants, other credit and debit card issuers, and loyalty and store card issuers that have agreed to collectively negotiate with a view to achieving the outcomes set out above.

3.2 Commencing negotiations

As soon as possible (but no later than a month after authorisation is granted).

3.3 Conduct of negotiations

Protocols and procedures will be put in place to make sure that the scope of the matters that can be discussed as part of the collective negotiation are appropriate and in compliance with the terms of the authorisation.

3.4 Individual negotiations

Participants are free to negotiate individually with Apple on all issues apart from the three issues set out in the section 2 at any time including during the period while collective negotiations are underway.

3.5 Collective boycott

Participants in the collective negotiation are expected not to conclude any individual negotiation with Apple until the collective negotiation has been concluded.

3.6 Joining and withdrawing from the collective negotiation

Additional parties may elect to participate in the collective negotiation after it has commenced, on the understanding that any decisions made prior to a party joining will not be open to reconsideration solely because a new party has joined the negotiation process.

Parties are expected to notify the group if they wish to withdraw from the collective negotiation process. No penalties will apply for withdrawal.

3.7 Concluding the negotiations

If the collective negotiation is concluded without Apple and the issuers reaching an agreement on the matters the subject of this document, each issuer can revert to one-to-one negotiations with Apple.

Collective Negotiation by Issuers with Mobile Wallet Providers

Response to Dr Pleatsikas' Report

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EXECUTIVE SUMMARY

1. A number of Australian credit and debit card issuers ("the applicants") are seeking authorisation to collectively negotiate with (and, in parallel, collectively boycott individual negotiations with) third party mobile wallet providers (i.e. providers of mobile wallets that are not themselves card issuers or card schemes such as Apple) on matters related to exclusivity for third party integrated mobile wallets on particular mobile devices and restrictions on pass-through (i.e. whether customer charges reasonably reflecting the additional costs of using third party mobile wallets may be applied by the applicants). The applicants also seek authorisation to negotiate collectively with respect to security standards.

2. An independent expert report prepared by Charles River Associates ("CRA") was appended to the authorisation application (the "first CRA report"). This report analysed the likely public benefits and detriments that could be expected to flow from the proposed conduct and concluded that there would likely be net public benefits.

3. On behalf of Apple, Dr Christopher Pleatsikas has provided comments on the first CRA report ("Dr Pleatsikas' report"). Gilbert + Tobin has asked that CRA prepare this response to Dr Pleatsikas' report. Having considered the comments in Dr Pleatsikas' report, we remain of the view that collective negotiation and collective boycott in relation to exclusivity and restrictions on pass-through would be likely to result in net public benefits.[1]

[1] This report does not consider the public benefits and detriments associated with collective negotiation of security standards. We understand that further detail on this part of the application for authorisation will be presented in a further legal submission from Gilbert + Tobin.

1. INTRODUCTION

4. A number of Australian credit and debit card issuers[2] ("the applicants") are seeking authorisation to collectively negotiate with (and, in parallel, collectively boycott individual negotiations with) third party mobile wallet providers (i.e. providers of mobile wallets that are not themselves card issuers or card schemes such as Apple) on matters related to exclusivity for third party integrated mobile wallets on particular mobile devices and restrictions on pass-through (i.e. whether customer charges reasonably reflecting the additional costs of using third party mobile wallets may be applied by the applicants).[3] The applicants also seek authorisation to negotiate collectively with respect to security standards.

5. An independent expert report prepared by Charles River Associates ("CRA") was appended to the authorisation application (the "first CRA report"). This report analysed the likely public benefits and detriments that could be expected to flow from the proposed conduct and concluded that there would likely be net public benefits.

6. On behalf of Apple, Dr Christopher Pleatsikas has provided comments on the first CRA report ("Dr Pleatsikas' report"). Gilbert + Tobin has asked that CRA prepare this response to Dr Pleatsikas' report.

7. In Section 2 of this response we clarify the framework for analysis and the context for the analysis in the first CRA report. In particular, we clarify:

   a. Our understanding of the nature of authorisation assessments and the role of market definition, market power and the quantification of benefits and detriments in the context of this authorisation;

   b. The relevant area of competition;

   c. The exclusivity enjoyed by Apple Pay with respect to access to the NFC functionality in iOS devices, the vertical relationships between the applicant issuers and Apple that underlie this exclusivity, and the market failures that the application for authorisation seeks to overcome;

   d. The nature of the proposed collective negotiation and collective boycott conduct (compared to Dr Pleatsikas' characterisation of the conduct as a "cartel");

   e. The relevance and utility of the Prisoners' Dilemma heuristic in understanding the likely counterfactual;

   f. The relevant concepts of substitutability for the assessment of the application for authorisation; and

   g. The "second factual".

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2 In this report, references to "issuers" includes references to entities such as Cuscal that provide "white label" card and payment services to a number of card issuers.

3 In this matter, for the reasons explained in paragraph 89 of the first CRA report, authorisation of a parallel collective boycott of individual negotiations is a necessary complement to authorisation of collective negotiations. Therefore, in the remainder of this response, references to collective negotiation include a parallel collective boycott of individual negotiations.

8. In Section 3, we re-assess the likely public benefits and detriments of the proposed conduct in light of the comments on public benefits and detriments in Dr Pleatsikas' report.[4] We conclude that Dr Pleatsikas' comments lack substance and that, as set out in the first CRA report, there are likely to be net public benefits from authorisation of the proposed conduct as it relates to collective negotiation (and collective boycott) on matters related to exclusivity for third party mobile wallets on particular mobile devices and restrictions on pass-through.

2. FRAMEWORK FOR ASSESSING PUBLIC BENEFITS AND DETRIMENTS

2.1. The nature of authorisation assessments

9. The Australian Competition and Consumer Commission's (ACCC's) authorisation process allows parties that wish to engage in certain conduct that might be in breach of the competition provisions of the *Competition and Consumer Act 2010* (CCA) to apply for authorisation of that conduct where they believe there to be an offsetting public benefit.[5] When granting authorisation, the CCA requires that the ACCC be satisfied that the likely public benefits outweigh the likely public detriments flowing from the proposed conduct for which authorisation is sought.[6]

10. Our understanding is that, when conducting its assessment, the ACCC:

    a. is not required to define relevant markets for analysis – rather, it is sufficient for the ACCC to identify the relevant "area of competition" within which it can meaningfully analyse the likely public benefits and detriments of the proposed conduct;[7]

    b. is not required to consider whether any firm relevant to the authorisation has a substantial degree of market power – rather, in the context of proposed collective negotiation/collective boycott activity, the ACCC has regard to the relative bargaining power of the parties;[8] and

    c. recognises that in many cases it is not possible to credibly quantify public benefits and detriments – the ACCC will often make a judgement based on a qualitative

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4 This report does not consider the public benefits and detriments associated with collective negotiation of security standards. We understand that further detail on this part of the application for authorisation will be presented in a further legal submission from Gilbert + Tobin.

5 ACCC Authorisation Guidelines, para 1.4, p. 9.

6 ACCC Authorisation Guidelines, para 5.2, p. 49. While there are two different tests that the ACCC must apply when considering whether to grant authorisation depending on the nature of the proposed conduct, in practice the ACCC considers there is little difference between them. ACCC Authorisation Guidelines, para 5.5 – 5.6, pp. 49 – 50.

7 ACCC Authorisation Guidelines, para 5.4, p. 49. Although the ACCC recognises that market definition is a tool that may be helpful for the purpose of its assessment, it considers that in most cases it will be sufficient to broadly identify the relevant area(s) of competition in order to assess the application: see ACCC Authorisation Guidelines, paras 5.25 – 5.26, p. 54.

8 ACCC Authorisation Guidelines, paragraph 2.16, p. 16. The term "market power" does not appear in section 90 of the CCA, which sets out the tests that the ACCC must apply when making a determination in respect of an application for authorisation. It also does not appear as a relevant factor that the ACCC will consider in its Authorisation Guidelines.

assessment of the existence and size of any claimed benefits and detriments[9] and will take into account benefits or detriments that have a "real chance" of arising.[10]

11. The economic analysis presented in the first CRA report is consistent with the ACCC's stated approach to assessing the benefits and detriments of proposed conduct that is the subject of an application for authorisation. In particular, the analysis in the first CRA report:

    a. was directed at the relevant area of competition, being the provision of mobile payment and mobile wallet services in Australia;[11]

    b. was concerned with relative bargaining positions, not market power;[12] and

    c. established that there is a real chance that significant public benefits may flow from the proposed conduct and that the potential detriments are limited.

12. Dr Pleatsikas asserts that the first CRA report lacks economic analysis "in relation to identifying and defining relevant markets and in relation to analysing market power issues."[13] He gives the impression that, in his view, market power, as opposed to bargaining power, is the relevant form of power for the purpose of assessing the application for authorisation.[14] Dr Pleatsikas also asserts that the first CRA report did not attempt to quantify the public benefits and detriments associated with the proposed conduct and does not posit a sufficiently precise factual and counterfactual on which to base an analysis of

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9 ACCC Authorisation Guidelines, paras 6.26 and 6.28 - 6.29, p. 64. The ACCC acknowledges that the CCA does not require it to quantify the level of public benefits and detriments likely to result from proposed conduct before granting authorisation. Although the ACCC encourages applicants to quantify the size of any claimed benefits and detriments when submitting an application for authorisation, it recognises that, in many cases, it will not be possible to credibly quantify public benefits and detriments. In such cases, a qualitative assessment is required and there must be a sufficient basis for concluding that the benefits and detriments are likely to result.

10 ACCC Authorisation Guidelines, para 5.17, p. 52. In this context it is not necessary to show that the benefits are certain to occur, nor that they are more probable that not. Rather, we understand that the ACCC will consider whether "there is a foreseeable commercial likelihood that the applicants will, following the implementation of the relevant conduct, act in a manner that delivers or brings about the public benefit or the public detriment". See ACCC Authorisation Guidelines, para 5.18, p. 52.

11 This reflects the market identified in the Application for Authorisation, 25 July 2016, p. 24.

12 The first CRA report refers on 24 occasions to the concept of "bargaining" positions, but does not, on any single occasion, refer to the "market power" of the parties.

13 Pleatsikas Report, paragraph 28, p. 12. Dr Pleatsikas does not provide any reasoning to support his view that the application of a SSNIP test to define one or more relevant markets is useful or desirable for assessing the application for authorisation. He only asserts that "in most cases it is both advisable and desirable, particularly for prospective conduct" and "the Authorisation Application concerns proposed prospective conduct". Pleatsikas Report, paragraph 42, p. 18.

14 Dr Pleatsikas appears to recognise the economic distinction between market power and bargaining power, noting, in particular, that firms can enjoy bargaining power without having significant market power. As he explains, market power is a market-wide concept that implies a firm has no significant competitive constraints, whereas bargaining power relates to the relationships between specific parties. Pleatsikas report, paragraph 54, p. 21.

benefits and detriments.[15] In making these comments, Dr Pleatsikas appears to misunderstand both the nature of the authorisation process and the analytical framework that the ACCC uses to assess applications for authorisation.

13. The preoccupation in Dr Pleatsikas' report with market definition leads to a focus on substitution between iOS and non-iOS devices in response to significant price increases (the standard market definition concept), rather than on the forms of substitution (and lack of substitution) that drive the relative bargaining positions of Apple and the applicant issuers in individual negotiations in the counterfactual, as set out in Section 4 of the first CRA report.[16] We elaborate on this in Section 2.6 below.

14. Dr Pleatsikas' focus on market definition and on the wrong question of substitution diverts his attention from the market failure at issue and the benefits of the authorisation application in rectifying that market failure in the relevant area of competition between mobile payment and mobile wallet services. This significantly contributes to his erroneous conclusion that the net benefits of the proposed conduct would likely be negative.[17]

2.2. The relevant area of competition

15. The application for authorisation defined the relevant area impacted by the proposed conduct as the "market in which mobile payment and mobile wallet services are supplied in Australia",[18] and this is also the area of competition that is the focus of the analysis in sections 4 to 9 of the first CRA report.[19]

16. It is important to recognise that this area of competition has vertical linkages to other activities. In particular:

    a. Third party mobile wallet providers (such as Apple) and card issuers are in a vertical relationship, with each needing to reach agreements with the other in order for the mobile wallets to be functional for users and for users to make use of the issuers' cards via the mobile wallets; and

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15 Pleatsikas Report, paras 90 and 100, pp. 35 and 39. In making these claims, Dr Pleatsikas appears to suggest that quantification of benefits and detriments is necessary for the proposed conduct to be authorised, and that one must predict the outcome of future negotiations between the parties, and the values of certain parameters (including the nature and number of competitors, types and features of mobile wallets, levels of Apple's fees and levels of pass-through fees) with a degree of certainty, in order to establish whether authorisation of collective negotiation/collective boycott activity would be likely to result in a net public benefit.

16 The relevant substitutability question is not whether there would be significant substitution between iOS and non-iOS devices in response to a significant price increase such as a SSNIP, but whether there would be significant substitution between iOS and non-iOS devices in response to a failure to reach agreements with the applicant issuers in relation to Apple Pay (meaning that Apple Pay would be functional only with a limited set of cards).

17 Pleatsikas Report, paragraph 5, p. 2.

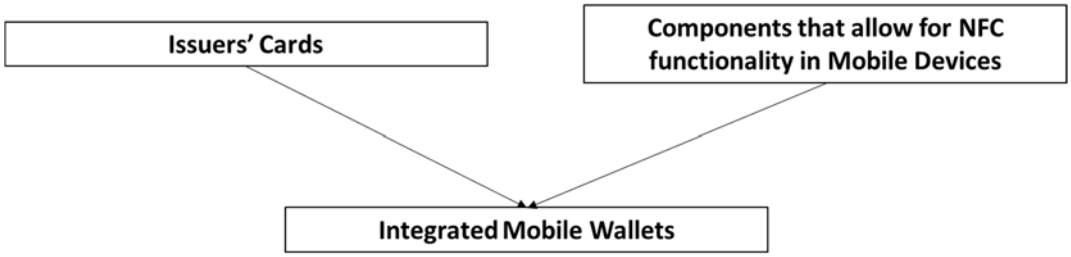
18 Application for Authorisation, Submission by Gilbert & Tobin, 25 July 2016, p. 24.

19 Dr Pleatsikas expresses confusion regarding the area of competition that is the focus of the first CRA report. At paragraph 43 of his report, Dr Pleatsikas asserts that "the narrative in [the first CRA report] shifts among smartphones, mobile wallets, banking, payment instruments and technology […] in a fluid manner, without any apparent pattern that would lead one to identify what relevant market (or markets), if any, is (are) being proposed for impact analysis". It is not clear why Dr Pleatsikas expresses confusion over this point given his succinct summary of CRA's analysis of impact at paragraphs 14 to 17 of his report, which is focused on competition in relation to mobile wallet products and mobile payments.

b. Mobile wallet providers (including issuers as well as third party mobile wallet providers) need to reach agreements with independent mobile device producers (such as Apple) that allow their mobile wallets to be available on those devices. As explained in the first CRA report, effective competition between mobile wallets on iOS devices requires integration with the NFC functionality in those devices (so that competitors to Apple can offer "integrated mobile wallets"). As a result, there is a particularly important vertical linkage between the provision of integrated mobile wallets (downstream) and access to the NFC functionality in mobile devices (upstream).

17. These vertical relationships are illustrated for integrated mobile wallets in the figure below.

Figure 1: Illustration of vertical relationships and key inputs in the provision of integrated mobile wallets



18. As explained in the following section, these vertical relationships are key to understanding the market failure at issue, the likely counterfactual and factual and the public benefits and detriments that are likely to flow from the conduct.

2.3. Exclusivity, vertical relationships and market failure

19. As explained in the previous sub-section, there is a vertical relationship between firms seeking to provide integrated mobile wallets (such as the applicant issuers) and NFC functionality embedded within mobile devices. In the context of this vertical relationship, Apple provides Apple Pay with "exclusive" access to NFC functionality in iOS devices, by refusing to supply third parties with access to that functionality.[20]

20. Dr Pleatsikas' report appears to object to the use of the term "exclusivity" in the first CRA report and to the existence of a vertical relationship between integrated mobile wallet providers and access to NFC functionality in mobile devices. Its objection to the existence of a vertical relationship between Apple and the applicants appears to be on the basis that the "exclusivity" at issue is in relation to access to a "component in an integrated, finished product". [21] However, access to a component in an integrated, finished product certainly

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20 That Apple refuses to provide such access is not in dispute. Apple's second submission to the ACCC states that "Apple will not and cannot agree to" terms including that "Apple provides direct access to the NFC radio" in iOS devices. See Apple's Second Submission, p.9.

21 Dr Pleatsikas' report states that "[g]enerally, in antitrust / competition analysis, the term 'exclusive' (or 'exclusivity') refers to a vertical relationship". It then observes that in the context of the first CRA report the term "appears to refer to a component in an integrated, finished product (e.g., the NFC functionality embedded within an iPhone)". Dr Pleatsikas appears to conclude from this that there is no vertical relationship, and so the use of the term "exclusivity" in the first CRA report is "not consistent with the way the term is generally used in antitrust / competition analysis". Pleatsikas Report, footnote 10, p. 6.

can be granted to third parties to facilitate the provision of another service in a downstream market. Indeed, other mobile device manufacturers have provided the applicants with access to the NFC functionality integrated in their devices and Apple provides access to other functions or features within its devices. There is therefore a vertical relationship between the owner of the components that allow for NFC functionality and downstream players. The fact that Apple does not currently provide the applicants with access to those components that allow for NFC functionality in iOS devices does not deny the existence of a vertical relationship.

21. Dr Pleatsikas' report focuses on the *horizontal* relationship between Apple (as a mobile wallet provider) and the applicants (as mobile wallet providers),[22] in order to reach a conclusion that there is "no economic rationale of which I am aware that would suggest that facilitating the formation of a cartel so that some competitors could better negotiate with other competitors would likely produce a pro-competitive (or even a competitively neutral) outcome".[23] This misses the important vertical characteristic of the proposed collective negotiation (and boycott). As the following sub-section explains, the characterisation of the proposed conduct as a simple horizontal cartel is incorrect, and a broad assertion that it is likely to be detrimental is not warranted.

22. The vertical relationship between Apple (as owner of an input that is important for competition between integrated mobile wallets on iOS devices) and the applicants (as mobile wallet providers) is central to the market failure that is likely to occur in the counterfactual (as described in Section 4 of the first CRA report) and the public benefits we anticipate from collective negotiation over exclusivity to redress that market failure (as described in Section 6 of the first CRA report). This vertical relationship is critical to understanding the economic rationale for the application for authorisation as well as the economic analysis in the first CRA Report.

23. A market failure is a situation in which the allocation of goods and services in a free market is not efficient.[24] A classic form of market failure is imperfect competition,[25] which may occur when firms are not freely able to enter into particular activities. For example, when access to an important input is denied to firms that need that input to produce certain products, a market failure may result, as competition downstream of the input may be less intense than otherwise.

24. In this particular case, access to the NFC functionality in iOS devices, which is essential for the provision of integrated mobile wallets on iOS devices, is a scarce resource that is controlled by a player that is also competing downstream with its own integrated mobile wallet on iOS devices. Vertically integrated firms that control upstream inputs that are important for downstream competition often have incentives to refuse access to those inputs in order to favour their own downstream product.

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22 Pleatsikas Report, paragraph 23, p. 11.

23 Pleatsikas Report, paragraph 26, p. 11.

24 Much of economic analysis concerns the inefficiencies of market failures, determining the optimum (i.e. most efficient) use of scarce resources, and comparing alternative options for achieving or approaching that objective. This was the nature of the first CRA report.

25 See, for example, Joseph E. Stiglitz (2000), *Economics of the Public Sector*, W.W. Norton, chapter 4.

25. In this particular case, Apple's stated position is not to provide access to its NFC functionality, and for the reasons explained in Section 4 of the first CRA report, in individual negotiations the respective bargaining positions of Apple and the applicant issuers are such that the likely counterfactual is one in which the applicant issuers will agree to join Apple Pay, Apple will maintain its stated position of exclusivity, and Apple Pay will be the only integrated mobile wallet on iOS devices. As a result, there will be *no competition downstream* in the supply of integrated mobile wallets on iOS devices. This is the market failure that is the subject of the application for authorisation of collective negotiations. This market failure will likely result in:[26]

    a. no choice of integrated mobile wallets for iOS device users (Apple Pay will be the only option);

    b. higher prices for mobile wallets;

    c. lower quality mobile wallets;

    d. less investment and innovation in mobile wallets; and

    e. high fees charged by Apple for the use of Apple Pay.

26. The market failure described above is significant because iOS devices make up a significant proportion of mobile devices suitable for mobile wallets,[27] iOS device users represent an even more significant group of consumers,[28] iOS device users are unlikely to switch to non-iOS devices purely in order to be able to use a non-iOS based mobile wallet,[29] and non-integrated mobile wallets on iOS devices (using NFC "stickers") are also unlikely

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26 See generally Section 6 of the first CRA report, which considers, in reverse, the benefits of a waiver or relaxation of exclusivity and hence the rectification of the market failure.

27 For the reasons explained in Section 2.6.2 below, smartphones are the most significant mobile devices for mobile wallets, due to offering the best balance of screen size and portability. Tablets and smartwatches are likely to be the next most important mobile devices, though each is less optimal with regard to one of these dimensions. iOS devices enjoy significant shares of each of these three types of devices in Australia. Regarding smartphones, as set out in Section 4.2.1 of the first CRA report, the iOS share of smartphone sales in Australia is around 40% and it is significantly higher than this among 18-44 year olds (an important segment for consumer spending): see the first CRA report, paragraph 54, p. 13.

28 See Section 4.2.1 of the first CRA report.

29 See Section 4.2.2 of the first CRA report. As explained there, if Apple maintains exclusivity, Apple Pay will not only not be constrained directly by rival integrated mobile wallets on iOS devices, but also, it will not be constrained by integrated mobile wallets on rival devices using Android or other operating systems (regardless of the price or quality of those wallets). This is because it is highly unlikely that iOS device users would switch to non-iOS devices purely in order to be able to use a non-iOS based mobile wallet, for the following reasons: iOS and non-iOS devices are viewed as differentiated products, iOS users tend to exhibit strong loyalty to iOS devices, mobile payment functionality is only one relatively minor potential functionality of a mobile device, and there are significant costs of switching mobile devices.

to represent a significant constraint on Apple Pay as the only integrated mobile wallet on iOS devices.[30]

27. As explained in Section 6 of the first CRA report, authorisation of collective negotiation in relation to exclusivity would strengthen the bargaining position on the issuers' side and result in a greater likelihood that Apple will waive or relax its stated position of exclusive access for Apple Pay to the NFC functionality in iOS devices, thereby allowing other integrated NFC capable mobile wallets that can make NFC payments at point of sale to be available on iOS devices (alongside and in competition with Apple Pay). This would overcome the market failure described above and deliver the public benefits described in Section 6, including greater choice for iOS device users, lower priced and higher quality mobile wallets, greater investment and innovation, and lower fees charged by Apple for Apple Pay.[31]

28. Collective negotiation over restrictions on pass-through of Apple's fees for Apple Pay also offers the potential to correct the market failures that are likely to arise in the counterfactual from Apple setting high fees for Apple Pay (due to Apple facing no competition from rival integrated mobile wallet providers on iOS devices where exclusivity is maintained) and these fees not being signalled to consumers (due to Apple's position of imposing restrictions on pass-through (i.e. signalling) of its fees to consumers). Relative bargaining positions in the counterfactual of individual negotiations will result in incentives for issuers to accept restrictions on pass-through, just as they will be incentivised to accept exclusivity. As explained in Section 8 of the first CRA report, collective negotiation over restrictions on pass-through:

> *brings with it the potential for the applicants to set price signals to their customers that reasonably reflect the additional costs of using Apple Pay (i.e. Apple's fees) and to recover those costs from the customers that cause the costs. This would allow for consumers to make more efficient decisions when deciding between different methods of payment (avoiding over-use of Apple Pay), promote efficient competition between alternative payment methods and avoid the distributional inequities that arise when restrictions on pass-through are applied […].*[32]

29. As also explained there:

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30 See Section 2.2 of the first CRA report and also Section 2.6.2 below. If Apple retains exclusivity in relation to the NFC functionality in iOS devices, competing mobile wallet providers will only be able to offer lower quality non-integrated mobile wallets to iOS users that rely on the use of an NFC "sticker", which the consumer must attach to the iOS device. As explained in Section 2.2 of the first CRA report, this significantly limits the functionality that can be offered and is likely to be considered by many users as an unattractive alternative to an integrated mobile wallet.

31 Regarding the last of these benefits, the public benefits associated with collective negotiation over exclusivity extend beyond simply greater competition in the supply of mobile wallet products. In this particular matter, negotiation of access to the NFC functionality in iOS devices will assist in reducing the costs that society is likely to incur from the use of Apple Pay. In the counterfactual, Apple will be largely unconstrained in the fees that it can charge issuers and will insist on issuers absorbing these fees rather than passing them through to Apple Pay users. However, as explained in Section 6.4 of the first CRA report, if collective negotiation were to result in a waiver or relaxation of exclusivity and access for the applicants to the NFC functionality on iOS devices, this would place downward pressure on Apple's fees for Apple Pay.

32 First CRA Report, paragraph 155.

> *Realistically, as long as Apple does not set excessive fees, issuers may not impose charges for using Apple Pay, even if they are allowed to. Such charges are unpopular with customers, and given the importance to issuers of iOS device users as a customer segment […] issuers may be wary of imposing charges on that segment that relate to their use of Apple Pay. However, it is nonetheless likely to be in the net public interest for issuers to successfully negotiate the ability to impose such charges, not least because this ability alone (and the potential for issuers to threaten to make use of it) may act to restrain Apple's fees below excessive levels.*[33]

30. When the proposed conduct is considered by reference to the vertical relationship and the market failures described above, there is clearly an "economic rationale" for authorisation. In this particular case, if collective negotiation were to lead to a waiver or relaxation of Apple's stated position of exclusivity in relation to the NFC functionality in iOS devices (to allow other integrated mobile wallets to operate on iOS devices), economic efficiency would be enhanced, both in the form of greater competition among mobile wallets and in the form of restricting Apple's fees for Apple Pay below the excessive levels that they would likely settle at if Apple Pay remained free from competition from other integrated mobile wallets on iOS devices.

2.4. Collective negotiation and collective boycotts

31. Dr Pleatsikas' report in many places engages in a superficial characterisation of the proposed collective negotiation and collective boycott activity as a "cartel".[34] Having characterised the conduct in this way, its conclusion that "the net benefits of the proposed conduct would be negative and probably significantly negative",[35] appears primarily to be based on the further assertion that cartels are "generally viewed as causing inefficient market outcomes".[36] This conclusion is as superficial as the "cartel" characterisation. In characterising the conduct in this way, Dr Pleatsikas' report appears to seek to avoid engaging with the market failure at the heart of the application for authorisation and in any detailed assessment of public benefits and detriments.[37]

32. Although we recognise that inefficient outcomes *can* arise from coordinated conduct among competitors (e.g. where the purpose of that conduct is to increase the price or restrict the quantity of a good or service supplied to consumers), there are forms of coordinated conduct among competitors that can have *pro-competitive* effects, and so are not

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33 First CRA Report, paragraph 158.

34 Pleatsikas Report, paragraph 24, p. 11. See also, paragraphs 5, 6(i), 6(j), 25, 26, 27, 48, 55(d), 57, 60, 61, 65, 66, 67, 68, 72, 73, 74, 79, 84, 85, 86, 87(a), 87(b), 87(c), 87(j), 87(k), 91, 93, 95, 96, 97, 98, 99, 101, 102, 103, 104, 105, 107, 108, 109 and 110.

35 Pleatsikas Report, paragraph 5, p. 2.

36 Pleatsikas Report, paragraphs 84, 98 and 102, pp. 31 and 39 - 40.

37 The superficial "cartel" characterisation ignores the imbalance of bargaining power between the applicants and Apple in the counterfactual, and the extent to which Apple's maintenance of exclusivity in relation to access to the NFC functionality in iOS devices is likely to impede effective competition in the provision of mobile wallets on iOS devices. It equally ignores that collective negotiation offers the potential for enhanced competition between mobile wallets, with consequential likely benefits for consumers, as set out in Section 6 of the first CRA report.

consistent with the ordinary understanding of a cartel.[38] For example, where competitors are in negotiations with a supplier and there is an imbalance of bargaining power between them, the effect of that conduct may be to enhance the bargaining power of the competitors so as to facilitate more efficient outcomes and benefits for consumers. This is precisely the reason why Australia's authorisation regime allows for authorisation of both collective negotiation and collective boycott activity.[39]

33. In our opinion, the proposed collective negotiation (and parallel collective boycott) in relation to exclusivity and pass-through, is likely to be *pro-competitive*.[40] The applicants are seeking to coordinate in order to attempt to obtain access to an input that would allow them to deliver *increased competition* in mobile wallets and to attempt to obtain the ability to signal additional costs (Apple's fees for Apple Pay) to consumers that cause those costs, with the likely effect of *reducing those additional costs and ensuring that they not be recovered inefficiently* over all consumers (including those that do not cause the costs). The conduct that is the subject of the authorisation application is therefore not conduct that can be superficially characterised as a "cartel" and as likely to be detrimental.

34. Ultimately, of course, whether the proposed conduct is characterised as a "cartel" or otherwise is immaterial to the assessment of the application for authorisation. What matters is the careful assessment of whether the likely public benefits outweigh any likely public detriments. This cannot be assessed on the basis of glib characterisations and assertions that certain activities "generally" have certain effects.

35. Dr Pleatsikas acknowledges that the proposed conduct in this case is limited to collective negotiation over exclusivity, pass-through and security considerations. However, in his opinion, it would be "unrealistic […] to expect that collective negotiations (and a collective boycott) aimed at a subset of issues would have no effect on other issues, such as pricing, particularly because pass-through (and even exclusivity) may have a close relationship to pricing".[41]

36. We do not disagree that collective negotiation over exclusivity and restrictions on pass-through may have a constraining effect on the fees that Apple will be able to charge issuers

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38 An obvious example is in the context of cooperative standard setting: see, for example, Carl Shapiro (2001), "Setting Compatibility Standards: Cooperation or Collusion?," in Rochelle Cooper Dreyfuss et. al. (eds.), *Expanding the Boundaries of Intellectual Propert*y, Oxford University Press, Chapter 4.

39 ACCC Authorisation Guidelines, para 2.16, pp. 16 - 17. We understand that the ACCC's Authorisation Guidelines recognise both collective negotiation and collective boycotts as a type of conduct that may be authorised. We also understand that the ACCC more generally recognises that there are public benefits that can flow from such conduct and expressly encourages parties to seek authorisation of collective boycott activity where it is expected to be efficiency enhancing by significantly improving the outcomes of collective bargaining. See *Competition Policy Review*, Final Report, March 2015, p. 401 and the associated ACCC Submission, p. 111.

40 Collective boycotts in parallel to the collective negotiation are necessary. In the context of the present application for authorisation, where the key to the public benefits that have been identified is the ability to counter the bargaining power of Apple in individual negotiations, and where that bargaining power stems from the dominant strategy that banks have in individual negotiations to accept exclusivity for Apple Pay and restrictions on pass-through, collective negotiation without a parallel collective boycott would be of no utility. If banks can continue to negotiate individually with Apple, the purpose of the collective negotiation, which is to deny Apple its current ability to play one bank off against the others, would be defeated.

41 Pleatsikas Report, paragraph 11, p. 7.

for use of Apple Pay if the applicants are successful in their endeavours to seek a waiver or relaxation of these provisions. Indeed, sections 6.4 and 8 of the first CRA report explicitly consider that waivers or relaxations of, respectively, exclusivity and restrictions on pass-through, would be likely to constrain Apple's fees for Apple Pay. However, contrary to the views expressed by Dr Pleatsikas, we consider this to be a source of potential public benefit from the proposed conduct, not an "inefficiency" associated with the operation of a cartel.[42]

2.5. The Prisoners' Dilemma

37. Dr Pleatsikas' report asserts that "the prisoners' dilemma is an inapt analogy to the situation facing all parties in this case […] and provides no useful insight into whether the […] conduct proposed should be authorised".[43]

38. The Prisoners' Dilemma game is a commonly cited heuristic that can assist in understanding the incentives facing actors in various economic, social and political situations. The Prisoners' Dilemma has been cited in reference to labour unions negotiating wages for their members,[44] nation-states stockpiling nuclear weapons,[45] athletes using performance enhancing drugs[46] and the setting of global oil prices,[47] among many other contexts. Each of these situations differs from the simple form of the game involving just

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42 Such fee reductions would flow from the *more effective competition* that would result from such waivers or relaxations:

a. In relation to exclusivity, any reduction in the fee that Apple charges issuers for use of Apple Pay as a result of a waiver or relaxation of the exclusivity provision would be the result of the increased competitive pressure that Apple Pay would experience from rival integrated mobile wallets on iOS devices; and

b. In relation to restrictions on pass-through, Apple's fees would likely be constrained below excessive levels if the applicant issuers had the ability to pass-through those fees to consumers, since the additional costs of using Apple Pay compared to other payment methods would be signalled to consumers, who would then be able to make their own efficient assessments of whether the benefits to them of Apple Pay justify the additional costs that result from Apple charging fees for Apple Pay.

43 Pleatsikas report, paragraph 85, p. 32. It goes on to state (para 87, p.32):

> *While economic games can sometimes be helpful in analysing the potential economic impact of real world conduct, the degree to which they can be helpful diminishes the farther the abstraction represented by the conditions of the game deviates from real world circumstances. If the conditions prevalent in the game deviate significantly from real world circumstances, the game is unlikely to be of any practical utility in understanding potential real world impacts of conduct. In my opinion, the marketplace circumstances for mobile wallet products deviate so far from the conditions described in the prisoners' dilemma that the prisoners' dilemma game is not an apt analogy and provides no useful insight into optimal strategies for issuing banks or mobile wallet product suppliers*

44 See, for example, Shlomo Maital and Yael Benjamini (1980), "Inflation as Prisoner's Dilemma," *Journal of Post Keynesian Economics*, 2(4): pages 459-481. See also T. Gylfason and Assar Lindbeck (1984), "Union Rivalry and Wages: An Oligopolistic Approach," *European Economic Review*, 24: pages 1-24.

45 See, for example, Avinash Dixit and Barry Nalebuff (2008), "Prisoner's Dilemma", in David R. Henderson (ed.), *Concise Encyclopaedia of Economics (2nd ed.)*, Indianapolis, Library of Economics and Liberty.

46 See, for example, Kjetil K. Haugen (2004), "The Performance-Enhancing Drug Game," *Journal of Sports Economics* 5(1): pages 67-86.

47 See, for example, Avinash Dixit and Barry Nalebuff (2008), "Prisoner's Dilemma", in David R. Henderson (ed.), *Concise Encyclopaedia of Economics (2nd ed.)*, Indianapolis, Library of Economics and Liberty.

two players and no outside actors, yet this does not deny the Prisoners' Dilemma character of the payoffs facing the actors – in particular that, in the absence of a means of effectively coordinating, it is individually better to "cheat" regardless of what the other actors choose to do.

39. The first CRA report suggested (and we maintain) that in the counterfactual of individual negotiations, when deciding whether or not to reach agreements with Apple that accept Apple Pay exclusivity, the applicant issuers find themselves in a similar situation to the prisoners in the classic Prisoners' Dilemma game, because the payoffs are likely to be such that there is a dominant strategy for each of them to "cheat" (in the sense of reaching agreements with Apple that accept exclusivity for Apple Pay on iOS devices), regardless of what others do.

40. Given this, the matter to be debated regarding the likely counterfactual is only whether the payoffs for the applicant issuers are such that their incentives in the counterfactual of individual negotiations are to reach agreements with Apple on Apple's terms, accepting exclusivity for Apple Pay on iOS devices. This perhaps does not even need to be debated, since Apple appears already to accept it. Apple states that collective negotiation would allow the applicant issuers to negotiate with Apple:

> *without the threat that one of their competitors will introduce Apple Pay for their customers, which would result in the loss of some customers as some will switch banks in order to access the innovative Apple Pay presentation method. This competitive dynamic, which the applicant banks explicitly want to avoid, would benefit Australian consumers.*[48]

41. That is precisely the counterfactual "dynamic" that was described in Section 4 of the first CRA report. Dr Pleatsikas' list of "deviations in circumstances" are therefore of only academic interest, at best.

2.6. Substitutability

42. Section 4 of the first CRA report established the key features that lead to Prisoners' Dilemma payoffs for the applicant issuers and the likely counterfactual being one in which the applicant issuers will reach agreements with Apple that accept Apple Pay exclusivity. In essence, Section 4 demonstrated that in the counterfactual there is likely to be:

    a. Limited switching away from iOS devices to non-iOS devices in the event that the applicant issuers do not reach agreements with Apple in relation to Apple Pay; but

    b. Significant substitution by iOS device users from cards issued by applicant issuers that have not reached agreements with Apple Pay to cards issued by issuers that have.

43. It is the combination of limited switching away from iOS devices and significant switching away from the applicant issuers' cards that drives the strong *bargaining position* of Apple and the incentives for the applicant issuers, in the counterfactual, to reach agreements with Apple accepting exclusivity for Apple Pay. In the bargaining context, in order to understand relative bargaining power, it is these forms of substitution that are relevant to consider.

44. Dr Pleatsikas' report discusses substitutability in a number of contexts, but it is mistaken or misdirected in each respect. Rather than focussing on those questions of substitutability

48 Apple's Second Submission, page 7.

that are relevant to the bargaining context and the market failure at issue, Dr Pleatsikas focuses on substitutability in the context of a market definition exercise that has no relevance for the assessment of the application for authorisation. He also makes a number of assertions with respect to substitutability that are not supported by the evidence.

2.6.1. Switching from iOS devices to non-iOS devices in the event that the applicants do not reach agreements with Apple

45. Dr Pleatsikas' report comments on substitutability between iOS devices and non-iOS devices in a number of places, asserting that "the fact that iOS and Android phones are differentiated is not determinative in identifying relevant market boundaries for smartphones (assuming that mobile phones or even smartphones were products in a relevant market of interest for this case)".[49]

46. However, the relevant substitutability question *in the bargaining context* is not whether there would be significant substitution between iOS and non-iOS devices in response to a significant price increase such as a SSNIP, but instead whether there would be significant substitution between iOS and non-iOS devices *in response to a failure to reach agreements with the applicant issuers in relation to Apple Pay (meaning that Apple Pay would be functional only with a limited set of cards)*.[50] The latter is, in our view, unlikely, because consumers view iOS and non-iOS devices as differentiated products, iOS users in particular tend to exhibit strong loyalty to iOS devices,[51] mobile payment functionality is only one relatively minor potential functionality of a mobile device and, last but not least, there are significant costs of switching mobile devices. This limited substitutability contributes to Apple's very strong bargaining position in individual negotiations with issuers.

47. Dr Pleatsikas' report appears to question the loyalty of iOS users, although in doing so has misinterpreted the evidence from Kantar WorldPanel ComTech presented in paragraph 67 of the first CRA report. That paragraph stated:

> *according to surveys by Kantar WorldPanel Comtech, 24% of Australian iOS buyers came from Android in the three months to September 2015, whereas only 13.5% of Australian Android buyers came from iOS in that period.*

48. Dr Pleatsikas interprets this statement as indicating "significant substitution between smartphone operating systems in a short period of time, contrary to the inference drawn in the CRA Report".[52] However, there is no basis for Dr Pleatsikas' interpretation of this statement: the statement provides no information at all on the absolute amount of switching

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49 Pleatsikas report, paragraph 33, p. 14.

50 The first CRA report only sought to opine on whether there was differentiation between iOS devices and non-iOS devices and concluded that differentiation between iOS devices and non-iOS devices was one reason why "Apple does not need to fear any significant substitution away from iOS devices to non-iOS devices if does not reach agreements with Australian issuers" and this "contributes to Apple's very strong bargaining position when negotiating in relation to Apple Pay exclusivity." First CRA report, paragraphs 59 and 60, pp. 14 - 15.

51 The loyalty that iOS users display to their devices had been recognised by Apple. According to Apple CEO Tim Cook at Apple's Q1 2016 earnings call, Apple's "iPhone loyalty rate is almost twice as strong as the next-highest brand". See: http://www.idownloadblog.com/2016/01/26/15-points-of-interest-q1-2016/.

52 Pleatsikas Report, paragraph 46, p. 19.

or rates of churn between iOS and Android devices in the three months to September 2015.[53]

49. The statement only informs us that, of those consumers that bought iOS devices in the three months to September 2015, 24% were previously Android users, and of those consumers that bought Android devices in the same period, 13.5% were previously iOS users. The statement was included in the first CRA report as evidence to demonstrate "the loyalty that iOS device users tend to have in relation to Apple".[54] If there were no loyalty, and users of iOS devices were as likely as any other user to buy an Android device as their next device, we would expect the proportion of consumers buying Android devices that came from iOS devices to be similar to the iOS market share of around 40%. Instead, only 13.5% of Android device buyers were previously iOS device users (much less than 40%).

2.6.2. Switching from issuers that have not reached agreements with Apple to those that have

50. Dr Pleatsikas' report queries the extent of substitution between cards of different issuers in the counterfactual. However, the evidence relied on appears to be general and not specific to payment cards. Dr Pleatsikas' report states that "there is evidence that bank customers face significant switching costs in relation to at least some banking products".[55] Dr Pleatsikas appears to conclude from this statement alone that customers face significant switching costs, or are resistant to switching, in respect of credit and debit products offered by banks (i.e. the products that are used to make mobile payments) and also asserts that the banks have "a customer base relatively resistant to switching that the banks could exploit".[56]

51. The only reference provided by Dr Pleatsikas for his assertion that banking customers face significant switching costs is a 2008 Public Competition Assessment (PCA) issued by the ACCC in respect of Westpac Banking Corporation's proposed acquisition of St George Bank Limited.[57] In the context of examining barriers to entry in the market for retail (personal and business) banking, the ACCC stated that:

> *the high degree of customer "stickiness" for many retail banking products may further increase entry barriers. Many market participants noted that it is often difficult and time-consuming for a customer to compare one product with another. In addition, even if a customer is aware of a product that is a "better deal" in terms of price, the inconvenience and, in some cases financial cost (e.g. mortgage exit fees), may deter switching.*[58]

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53 Dr Pleatsikas appears to have misinterpreted the statement as saying that *of all iOS device owners* in Australia, 24% came from Android devices in just a three month period (and, correspondingly, *of all Android device owners* in Australia, 13.5% came from iOS devices in the same short period).

54 First CRA report, paragraph 67, p. 26.

55 Pleatsikas Report, paragraph 57, p. 23.

56 Pleatsikas Report, paragraph 79, p. 30.

57 Pleatsikas Report, footnote 70, p. 23.

58 Australian Competition and Consumer Commission, "Public Competition Assessment, Westpac Banking Corporation – proposed acquisition of St George Bank Limited," 13 August 2008, paragraph 71.

52. This statement does not support a conclusion that consumers are resistant to switching in respect of credit and debit cards in particular. The range of retail banking products considered by the ACCC in the context of that particular merger included not only transaction accounts and credit cards but also term deposit products, home loans, personal loans, margin loans, SME banking, equipment finance, and agribusiness banking.[59] The ACCC did not state that it considered consumers to be sticky with respect to transaction (debit) accounts and credit cards in particular.

53. Regardless, whether or not consumers are "sticky" with respect to these products is not the relevant question for the purpose of the authorisation application. Rather, the relevant question for assessment of the authorisation application is whether iOS users would be likely to obtain a new credit or debit card from an issuer that accepted Apple Pay (with or without closing any other accounts they may have with their existing financial institution) if the issuer of their existing card did not offer the ability for iOS users to use Apple Pay. It is this more specific form of switching that informs the incentives of the applicants to accept the terms and conditions proposed by Apple for the use of Apple Pay.

54. In any event, consumers do not appear to be "sticky" with respect to debit or credit cards. Since 2008 there have been a number of inquiries in relation to the retail banking sector that have considered barriers to switching and consumers' propensity to switch in relation to both transaction accounts (which is a prerequisite for use of a debit card) and credit cards.[60] The results of industry consultation in the context of these inquiries suggest that consumers are not "sticky" in relation to either debit or credit accounts and that iOS users would not face any significant impediments to obtaining either a debit or credit card from an alternative issuer if the issuers of their existing cards did not offer the ability to use Apple Pay.[61] We set out a more detailed account of the findings of these inquiries in **Appendix A** to this report.

55. Dr Pleatsikas further argues that switching between issuers would be limited because, as he asserts, non-integrated mobile wallets may be able to effectively compete with integrated mobile wallets despite not being integrated with the NFC functionality in the device.[62] He also considers that "there is no reason to believe that mobile wallet technology will not continue to evolve (and rapidly). Smartwatches and fitness bands are two alternatives to the use of smartphones for implementing mobile wallet technology, but

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59 Australian Competition and Consumer Commission, "Public Competition Assessment, Westpac Banking Corporation – proposed acquisition of St George Bank Limited," 13 August 2008, paragraph 28.

60 Australian Government, Banking Services Switching Arrangements, Banking services: cost-effective switching arrangements, 4 July 2011 and Senate Economics Reference Committee, Inquiry into interest rates and informed choice in the Australian credit card market, December 2015, Chapter 4, pp. 35 – 54.

61 Indeed, ANZ chief executive Shayne Elliott recently advised during an interim results call that around a week after ANZ announced that it would offer Apple Pay, attempts to apply for a new credit card online had increased by 20 percent, the number of online deposit applications on the same day as the announcement were the highest on record (more than double the daily average), and "that higher level is continuing." See: James Eyers, "Apple Pay-led surge in ANZ card customers drives rival banks to renegotiate," Sydney Morning Herald, 10 May 2016 at http://www.smh.com.au/business/banking-and-finance/apple-payled-surge-in-anz-card-customers-drives-rival-banks-to-renegotiate-20160509-goppf0.html.

62 Pleatsikas Report, paragraph 76, pp. 28 – 29.

there are others (e.g. attachable NFC chips that can be affixed to any device or even NFC chips that can be attached to key rings)".[63]

56. As identified in section 2.2 of the first CRA report, *non-integrated mobile wallets* based on NFC stickers have limited functionality compared to the functionality possible with integrated mobile wallets, and are unlikely to add much to a consumer's payment experience over a physical contactless card.[64] Given these differences in functionality, consumers are likely to consider integrated mobile wallets to be significantly superior to non-integrated versions, and to view non-integrated versions as little better than contactless cards (or the NFC functionality embedded in fitness bands, wristbands or fobs).[65]

57. Regarding the *other alternatives* that Dr Pleatsikas mentions, mobile wallet functionality depends on the nature of the device on which the wallet is located. Key features of mobile wallets are their ability to allow consumers to view information about their accounts and/or choose among different accounts to make payments. These features require screens of a sufficiently large size and a way for the customer to interact with the mobile wallet.

58. At present, the only devices that have sufficient screen sizes and input options to allow this functionality are smartphones, tablets and smartwatches. Of these, smartphones are currently by some distance the devices most likely to be used for mobile payments, due to offering the best combination between mobility, screen size and input options, with tablets and smartwatches offering, respectively, less mobility and much smaller screen size and input capability.[66]

59. Although *mobile payments* via NFC functionality may be possible with other devices such as fitness bands, wristbands and fobs (that can be attached to key rings), the absence (or limited size) of screens and input options on these devices limit the functionality they can offer to little or no more than a contactless credit card and preclude these alternatives from being used as *mobile wallets*. In short, they are not good substitutes for integrated mobile

63 Pleatsikas Report, paragraph 81, pp. 30-31. Dr Pleatsikas' reference in this paragraph to smartwatches is an errant reference. Dr Pleatsikas suggests that the first CRA report was "concerned only with mobile wallet products that access the NFC chip embedded within smartphones", however it is clear from the first CRA report that it was concerned with mobile wallet products that access the NFC functionality in *all iOS devices*, including not only iPhones, but also iPads and Apple Watches.

64 First CRA Report, paragraphs 21 – 23, p. 5.

65 Moreover, NFC stickers have to be attached to the user's device, detracting from its aesthetics, and compromising its resale value, and may "clash" with the NFC functionality embedded in the devices, precluding the consumer from also using the integrated mobile wallet. See the first CRA report, paragraph 22 – 23, pp. 5 - 6. A number of consumer reviews and forums have identified aesthetics as a relevant factor in their decision to purchase an NFC sticker. For example, see: http://reckoner.com.au/2014/01/commonwealth-banks-paytag-hands-on/ and http://forums.whirlpool.net.au/archive/2212732.

66 Apple's share of smartphone sales in Australia is around 40% and its share among 18-44 year olds is somewhat greater. See first CRA report, paragraph 54, p. 13.

wallets on smartphones, tablets and smartwatches.[67] These alternative methods of payment may also be less secure than integrated mobile wallets.[68]

2.7. The second factual

60. Dr Pleatsikas' report rightly identifies that the first CRA report contemplated more than one factual. The first factual that the first CRA report contemplated was that collective negotiation might result in some waiver or relaxation by Apple in relation to exclusivity and restrictions on pass-through.[69] The second factual was stated as follows:[70]

> *An alternative possible outcome of collective negotiation may be that the collective negotiations reach a stalemate and do not allow for agreements between Apple and the applicants in relation to integrated mobile wallets on iOS devices including Apple Pay. This would mean that Apple Pay would be limited in Australia to cards issued by American Express, ANZ and other non-applicant issuers. While this is a possible outcome, it seems more likely that agreements will ultimately be reached between Apple and the applicants, either through collective negotiations, or, subsequently, individual negotiations between the applicants and Apple. There will be considerable pressure on both Apple and the applicants to conclude negotiations successfully, as both will experience customer dissatisfaction and reputational damage if they do not, and the applicants in particular will experience a loss of customers to issuers that have reached agreements with Apple, such as ANZ: this is likely to place further pressure on them to accept Apple's terms.*

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67 For example, in the UK, Barclays offers its customers the options of a loop, a wristband or a fob. These devices can be waived close to a terminal to make a payment. However, the user can only track their spending and top-up their accounts with the bPay app, which can be downloaded onto the user's mobile phone. See: https://www.bpay.co.uk/home#meet-the-bpay-family. In respect of Barclay's wristband and fob, at least one online review notes that:

> *…we think bPay is an over-engineered solution to a problem that doesn't exist. Why bother using a wristband or even using a keyring fob instead of a card that's already in your bag or pocket?*

See: http://www.expertreviews.co.uk/technology/1403566/what-is-barclaycard-bpay-and-how-does-it-work.

68 In comparing the relative features of Apple Pay and Barclays BPay one commentator noted:

> *The bPay fob, given its small dimensions, can easily be lost; the bPay sticker may be improperly attached to your phone and fall off; the wristband seems more reliable, being tied around your wrist, but it can still be lost or stolen. In all these unlucky events, anyone who finds bPay devices can use them. No security check prevents thieves from using bPay tools once found, unless the owner shuts them down.*
>
> *Apple Pay security works differently. When holding your iPhone near the shop reader, you need to have your finger on the Touch ID fingerprint sensor of your device. If the fingerprint doesn't match, the payment won't occur.*
>
> *If the iPhone is lost or stolen, payments can be suspended without need to cancel the credit card. Its data isn't stored on the device or Apple server. When registering a card, you are assigned a Device Account Number, which is stored in the Secure Element, a chip inside your Apple device. Hackers cannot access it.*

See: http://www.macworld.co.uk/opinion/apple/apple-pay-vs-barclays-bpay-which-one-is-winner-3619570/.

69 First CRA Report, paragraphs 88, 155 and 161, pp. 23, 39 and 41.

70 First CRA Report, paragraph 90 (footnotes omitted), pp. 23 – 24.

61. It is a misunderstanding to interpret the second factual with the proposed conduct as simply a delay of three years with no agreements between the applicant issuers and Apple for that period. Instead, as the above quote explains, the likelihood is that agreements will be reached, if not through collective negotiations, then through individual negotiations. We expect this to occur much sooner than three years, due to the customer and competitive pressure that the applicants in particular will experience, including the loss of customers to ANZ and American Express (and other issuers in time). To be clear, although the authorisation term applied for is three years, the boycott only applies for the period of time that the collective negotiation is ongoing and each of the applicants would be free to "break ranks" and negotiate individually with Apple at any earlier point without penalty. By agreeing to collectively negotiate and boycott, they would not be tying themselves for three years.

62. The customer and competitive pressure we anticipate, which we expect will lead to a relatively quick resolution either through collective or individual negotiations, are reinforced by the observations of Dr Pleatsikas and Apple as well as industry players (e.g. ANZ chief executive Shayne Elliot), that mobile wallets represent a "paradigm shift" in payment methods.[71] If they do represent a "paradigm shift that will fundamentally alter (and/or disrupt) the character of the payments instrument industry",[72] issuers cannot afford not to be an effective part of this shift sooner rather than later.

63. One might ask: if there is an expectation that agreements will be reached much sooner than three years, why have the applicants sought authorisation to collective negotiate (and boycott) for three years? The three year term of the authorisation has a plausible economic rationale, notwithstanding that agreements are likely to be reached much sooner. Only if there is a sufficiently long authorisation period will there be a significant improvement in the bargaining position of the applicant issuers. If the authorisation period is short – for example, just one year – Apple may reason that it can afford to wait out that year, refuse to negotiate with the applicants collectively, and enter individual negotiations with the applicants once the short period has expired. If the authorisation period is long, however,

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71 At paragraph 9 (p. 6) of his report, Dr Pleatsikas states:

> *In general, mobile wallet products are viewed in the payments industry as a significant technological innovation that will change the way that at least many and probably most consumers, merchants, banks and card schemes will utilise payment instruments. A significant shift to mobile wallet products is expected to occur within a relatively short period of time. In the parlance of dynamic competition, mobile wallet products are viewed as a paradigm shift that will fundamentally alter (and/or disrupt) the character of the payment instruments industry.*

In Section 2.2 of its submission, Apple states that:

> *Apple believes that, absent the proposed collective negotiations, Apple Pay will become widespread in Australia based on its success in other markets.*

See also Clancy Yeates, "ANZ CEO Shayne Elliot says digital wallets may displace plastic cards in less than a decade," The Age, 14 July 2016. According to this article, ANZ CEO Shayne Elliot has argued that the reasons for mobile wallets rivalling plastic cards include that consumers have already embraced contactless payments and it is not a big leap to use phones, Australia has the payments infrastructure to support digital wallets and smartphones can be more secure and hold extra information such as retailers' coupons or loyalty scheme details. According to the article, Mr Elliot further stated: "I could see it absolutely displacing plastic and I'm not talking in 10 years, we're talking in a much shorter period of time than that".

72 Pleatsikas report, paragraph 9, p. 6.

there will be the potential (albeit not a likelihood, given the customer and competitive pressures discussed above) that agreements will not be reached for that long period. This potential, and the associated uncertainty for Apple, would be more likely to bring Apple quickly to the collective negotiation table and to contemplate waivers or relaxations of exclusivity and restrictions on pass-through.

3. BENEFITS AND DETRIMENTS OF AUTHORISATION

64. Scattered in various parts of Dr Pleatsikas' report are comments that bear on the benefits and detriments of authorisation of the proposed collective negotiation. In this section we deal, in turn, with Dr Pleatsikas' comments on the benefits and detriments of a waiver or relaxation of exclusivity and a waiver or relaxation of restrictions on pass-through. We also respond to Dr Pleatsikas' allegation that the first CRA report omitted three competitive detriments likely to flow from the proposed conduct. Having considered Dr Pleatsikas' comments, we remain of the view that the proposed collective negotiation (and boycott) in relation to exclusivity and restrictions on pass-through would likely result in net public benefits.

3.1. Exclusivity

3.1.1. The significance of exclusivity for Apple Pay on iOS devices

65. As explained in Section 4 of the first CRA report, we expect the likely counterfactual in the absence of collective negotiations to be one in which eventually all issuers will be persuaded to reach agreements with Apple that accept exclusivity for Apple Pay on iOS devices, due to the importance for issuers of iOS device users as a customer segment, and the competitive disadvantages that issuers will face as long as they do not have agreements to be part of Apple Pay.

66. Collective negotiation in relation to exclusivity would strengthen the bargaining position of the applicants and increase the likelihood that Apple will agree to waive or relax Apple Pay exclusivity in some way. As explained in Section 6 of the first CRA report, a waiver or relaxation of exclusivity is likely to bring significant public benefits in the form of greater choice, lower prices and better quality among integrated mobile wallets on iOS devices, lower fees for the use of Apple Pay, and greater investment and innovation in integrated mobile wallet technology. The first CRA report acknowledged, in Section 7, that a waiver or relaxation of exclusivity may, at the same time, mean the loss of potential public benefits associated with exclusivity, such as incentives for investment, reductions in search costs, the avoidance of compatibility costs and quality assurance. However, it concluded that the potential benefits of exclusivity are limited on the facts of this case, and their loss is likely to be outweighed by the significant benefits of a waiver or relaxation of exclusivity.

67. The content of Dr Pleatsikas' report has not caused us to change our view on any of these matters. The following sub-sections respond to particular assertions in Dr Pleatsikas' report that relate to the public benefits and detriments of the application for authorisation of collective negotiation in relation to exclusivity.

3.1.2. Alternative means of delivering mobile payments

68. Dr Pleatsikas asserts that "[t]he most fundamental problem in the CRA Report from the perspective of presenting an economic analysis of competition (and competitive benefits)

for mobile wallet products is the lack of any rigorous analysis of the alternative means for delivering mobile wallet services to consumers".[73]

69. The first alternative that Dr Pleatsikas points to is non-integrated mobile wallets. Dr Pleatsikas suggests that non-integrated mobile wallets (which the issuers would be able to provide regardless of whether exclusivity were waived or relaxed) may be competitive with Apple Pay as an integrated mobile wallet, and alleges that the first CRA report "appears merely to assume" that non-integrated mobile wallets would not be competitive with integrated mobile wallets.[74] The second alternative that Dr Pleatsikas posits is NFC functionality embedded in devices without any significant screen size or effective input methods, such as wristbands, fitness bands and key fobs.[75]

70. As just noted, Section 6 of the first CRA report explained that if collective negotiation over exclusivity were to result in a waiver or relaxation of exclusivity in relation to integrated mobile wallets on iOS devices, there would likely be significant public benefits in the form of greater choice, lower prices and higher quality of integrated mobile wallets on iOS devices, as well as lower fees for the use of Apple Pay, and greater investment and innovation in mobile wallet technology. These benefits depend on integrated mobile wallets on iOS devices being able to offer *significant enhanced functionality and value* to iOS users compared to potential alternatives such as non-integrated mobile wallets and NFC functionality embedded in devices such as fitness bands, wristbands and key fobs.

71. Dr Pleatsikas appears to argue that if these potential alternatives are good substitutes for integrated mobile wallets on iOS devices, the benefits described above would not materialise, and the first CRA report did not analyse whether these potential alternatives would be unable to compete effectively in the mobile wallet marketplace.

72. First, if this is what Dr Pleatsikas did intend to argue, he overlooks the fact that, whether or not these alternatives are substitutes to some extent, if they are significantly differentiated then benefits in the form of greater choice, lower prices and higher quality of integrated mobile wallets on iOS devices would flow from a waiver or relaxation of exclusivity, as this would result in greater competition and greater choice for consumers *among integrated mobile wallets*. To give a simple analogy, sugar free and sugared breakfast cereals are differentiated products and may be substitutes to some extent, however the existence of sugared cereals would not deny the potential benefits of greater competition between sugar free breakfast cereals, which are themselves capable of some differentiation. Dr Pleatsikas' suggestion, that if integrated and non-integrated mobile wallets are alternatives to some extent there would be no benefits from allowing a larger number of integrated mobile wallets to compete, should therefore be rejected.

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73 Pleatsikas report, paragraph 76, pp. 28 - 29.

74 See Pleatsikas report, paragraph 76, which states: "[t]he CRA report appears merely to assume that any mobile wallet products that cannot access the embedded NFC chip in a smartphone would be perceived as so inferior by consumers that these alternative mobile wallet products practically would be unable to compete at all" and "[t]here is no economic analysis (and, indeed, there are no data at all) in the CRA report to support any assumption that alternative methods of delivery of mobile wallet services would be unable to compete effectively in the mobile wallet marketplace".

75 Pleatsikas report, paragraph 81. Dr Pleatsikas also refers in this paragraph to smartwatches, however this is an errant reference, for the reasons explained in note 63 above.

73. Second, in any event, the potential alternatives that Dr Pleatsikas posits are not good alternatives for integrated mobile wallets on iOS devices because they offer significantly less functionality. Rather than "assume" this, the first CRA report reached this conclusion following careful analysis of the characteristics of the potential alternatives.[76]

74. Dr Pleatsikas also alleges that "there is no analysis of the relative benefits and strengths of the Apple Pay product (or any Third Party Mobile Wallet product) in comparison to the banks' own mobile wallet products". However, there was indeed such analysis in Section 2.3 of the first CRA report, which discussed differentiation between mobile wallets and highlighted the benefits and strengths of both third party mobile wallets such as Apple Pay and issuer proprietary mobile wallets. Indeed, given the superior functionality and digital engagement that issuer proprietary integrated mobile wallets can offer compared to Apple Pay,[77] there are likely to be significant benefits if iOS users are able to choose between Apple Pay and issuer proprietary integrated mobile wallets.

3.1.3. Fragmentation and the value to consumers of variety and choice

75. Dr Pleatsikas argues that "certain real world considerations do not necessarily support" a view that the offer of a greater number of mobile wallets will lead to more rapid consumer acceptance and adoption of these products.[78] In his opinion, "if the marketplace for mobile wallet products is too fragmented, with many differentiated products, consumers may incur significant search costs trying to find the product(s) that best matches (match) their preferences".[79] He notes that "consumers presented with a bewildering array of choices, with highly differentiated features and capabilities, can find it difficult to make optimal choices, especially with new, unfamiliar, highly innovative products, with the result that many defer making choices until the marketplace sorts itself out and the best (or at least better) choices become clearer".[80] In his opinion, "the outcome of a highly fragmented marketplace for mobile wallet products could well be to reduce rather than increase consumer acceptance, adoption and usage than if fewer products were more prominent in the marketplace".[81]

76. We infer from these comments, and the context, that Dr Pleatsikas considers that a potentially more efficient market outcome than the applicants competing with Apple Pay with their own integrated mobile wallets on iOS devices, would be for Apple Pay to remain as the *only* integrated mobile wallet available to iOS users, thereby limiting choice (and the

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76 Regarding non-integrated mobile wallets, Section 2.2 of the first CRA report considered the extent to which non-integrated mobile wallets are good alternatives for integrated mobile wallets, listing the significant additional functionality, aesthetic benefits and avoidance of "card clash" benefits offered by integrated mobile wallets.

Regarding NFC functionality embedded in fitness bands, wristbands and key fobs, the first CRA report did not directly address these for the simple reason that the first CRA report was concerned with mobile wallets, whereas these devices lack the ability to offer mobile wallet functionality due to their small or non-existent screens. Indeed, they offer little advancement in terms of digital payment functionality than contactless cards.

77 See first CRA report, paragraphs 24 and 27, and see also paragraph 121 below.

78 Pleatsikas Report, paragraph 77, p.29.

79 Pleatsikas Report, paragraph 77, p. 29.

80 Pleatsikas Report, paragraph 78, p. 30.

81 Pleatsikas Report, paragraph 77, p. 29.

alleged negative consequences that arise when consumers have too much choice). However, Dr Pleatsikas also refers to the marketplace sorting itself out "and the best (or at least better) choices" becoming clearer,[82] notwithstanding that exclusivity for Apple Pay would *preclude* the efficient sorting of rival integrated mobile wallets on iOS devices to arrive at the "best (or at least better)" products.

77. One of the primary benefits of the proposed conduct identified in the first CRA report is the greater potential for iOS users to have choice among a variety of alternative integrated mobile wallets, rather than just Apple Pay alone. This choice, in turn, is likely to lead to other benefits including more keenly priced and higher quality mobile wallets. In our opinion, given that integrated mobile wallets are likely to be highly differentiated,[83] and consumers are likely to have different preferences for integrated mobile wallets, choice between two or more is likely to result in a better matching of consumer preferences than if there is only one, as well as greater competition among integrated mobile wallets to attract consumers.[84]

78. The offer of more than one integrated wallet on iOS devices is also likely to encourage greater adoption of mobile wallets and mobile payments.[85] This is, in part, because of a perceived lack of security of mobile payments among Australian consumers and the higher degree of comfort that they appear to have with mobile wallets provided by their main financial institution.[86]

79. Dr Pleatsikas' fragmentation concern seems to be that the market for mobile wallets may become *highly fragmented* and that such fragmentation may lead to what behavioural economists term "overchoice" or "choice overload". This is a phenomenon that not all economists or behavioural scientists agree exists outside of a very limited range of choice environments.[87]

80. In our opinion it is unlikely that if issuers were able to offer integrated mobile wallets on iOS devices there would be a large proliferation of integrated mobile wallet products that iOS users would have to choose between. The likely options for iOS users would be Apple Pay (already pre-installed on iOS devices) and the proprietary integrated mobile wallet of the user's card issuer. If the user has cards from multiple issuers, they may choose between the integrated mobile wallets of those issuers, or download all of the wallets of those

82 Pleatsikas Report, paragraph 78, p. 30.

83 See First CRA Report, Section 2.3.

84 First CRA Report, paragraph 93, p. 24.

85 First CRA Report, paragraph 95, p. 25.

86 First CRA Report, paragraphs 99(c) and 102, pp. 26 – 27.

87 For a summary of past research conducted in relation to choice overload, see: Scheibehenne, B., Greifeneder R. and Todd, P.M., "Can There Ever Be Too Many Options? A Meta-Analytic Review of Choice Overload", *Journal of Consumer Research*, Vol. 37, No. 3 (October 2010), p. 410. The authors note that the "choice overload hypothesis" that underlies Dr Pleatsikas' concern in this matter "challenges most choice models in psychology and economics according to which expanding a choice set cannot make decision makers worse off". See also comments by Mehta, J and Sugden, R. in "Making Sense of Complex Choice Situations," in University of East Anglia, Centre for Competition Policy, *Behavioural Economics in Competition and Consumer Policy*, 2013, Chapter 2, p. 46.

issuers, however even then this would hardly be a "proliferation" of options and it is hard to imagine that the user would "freeze" and not download any in this circumstance.

81. Behavioural economics tells us that even if there is a high degree of "fragmentation" of options, this does not necessarily lead to consumer inertia as a result of "choice overload". Negative effects in terms of customer decision making (i.e. a delay in consumers making a decision or consumers making the "wrong" decision) do not always follow from the offer of "too much choice". Rather, negative effects depend on, at least, the following two necessary preconditions.[88]

    a. First, that consumers are unfamiliar with, or do not have prior preferences for, the items in the choice assortment. Studies suggest that consumers with clear prior preferences prefer to choose from larger assortments (the opposite of choice overload).

    b. Second, that there is no obviously dominant option in the choice set and the proportion of non-dominated options is large. Where this is not the case, the decision will be easy for the consumer, regardless of the number of options.

82. In the present context, neither of these conditions is likely to hold. Although Australian iOS users may not yet be familiar with mobile wallet products, the majority are already used to making contactless payments. They are also likely to have a relatively clear understanding of their own preferences when it comes to the available features of a mobile wallet. For example, consumers that opt to use a mobile wallet are likely to understand whether they have a preference for using multiple cards and switching between them or whether they have a preference for using the mobile wallet provided by their primary issuer, which may give them greater comfort in relation to security and would allow them a greater ability to check and manage their account balances and credit limits.

83. For each iOS user, there is also likely to be a dominant option or a small set of dominant options when it comes to their choice of mobile wallet and a small number of non-dominant options. The dominant options are likely to be the integrated mobile wallet offered by Apple, which is the default option pre-installed on iOS devices, and the integrated mobile wallet offered by their primary debit or credit card issuer, which iOS users would be required to install. Further, given that a primary impediment to the adoption of mobile wallet products is a lack of trust in the security of mobile payments, we would not expect the number of non-dominant mobile wallet options available to consumers to be large.

84. The suggestion that smartphone users might be reluctant to adopt mobile payments when faced with too many mobile wallet options also does not reflect their ability to choose and adopt suitable apps in other categories, from among many options, and to manage multiple apps on their devices. Both iOS and Android users can select from thousands of apps to use on their mobile phone, many offering similar functionality, and use ratings systems, online user reviews and recommendations from family and friends to identify the apps that are of highest quality and/or best suited to their preferences. According to Statista,

88 These are considered to be necessary but not sufficient preconditions for choice overload. See: Scheibehenne, B., Greifeneder R. and Todd, P.M., "Can There Ever Be Too Many Options? A Meta-Analytic Review of Choice Overload", *Journal of Consumer Research*, Vol. 37, No. 3 (October 2010), pp. 410 – 411. See also comments by Mehta, J and Sugden, R. in "Making Sense of Complex Choice Situations," in University of East Anglia, Centre for Competition Policy, *Behavioural Economics in Competition and Consumer Policy*, 2013, Chapter 2, p. 47.

Australian smartphone users had, on average, 33 apps installed on their smartphones in 2013.[89]

85. Limiting the number of integrated mobile wallet products available to iOS users to only one product (Apple Pay) is an extreme approach to alleviating (speculative and unlikely) concerns about the possible negative effects of market fragmentation. Denying consumers *any choice* with respect to the availability of integrated mobile wallet products on iOS devices is inconsistent with both conventional economic theory (which asserts that consumer preferences will be better met when given more than one choice) and even the "choice overload hypothesis" that underpins Dr Pleatsikas' concerns (which is concerned only with the negative consequences of providing consumers with "*too much choice*", not "*any choice*" at all).

86. Limiting the availability of integrated mobile wallet products available to iOS users to Apple Pay alone will also deny iOS users the benefits that come with dynamic competition between players in the early stages of product adoption, and would be likely to lead to sub-optimal mobile wallet options. Examples of dynamic competition between different varieties of a new product are many. In each case, competition has selected the "fittest" or "best" suited products for consumer preferences, and has also spurred innovation and quality enhancements. In the absence of competition in the early stages of development and adoption of new products, there would likely be sub-optimal outcomes, with inferior products prevailing due to barriers to entry, and those products failing to be optimally enhanced due to lack of competition from alternatives.

87. To give just one example, during the 1990s there developed a "browser war" between Microsoft's Internet Explorer and Netscape's Navigator. Navigator was the first mass-market internet browser. Its success caused Microsoft to release Internet Explorer 1.0 in 1995. Many new versions of Navigator and Internet Explorer were released in subsequent months and years, with Internet Explorer playing catch up. Gradually Internet Explorer did catch up. Although Internet Explorer may also have enjoyed an advantage of being bundled with every copy of Microsoft Windows, the point here is that if Internet Explorer had been free of competition from Navigator, it is unlikely that browser functionality would have improved as rapidly as it did in the mid-1990s.

88. Another example is the "videotape format war" between VHS and Beta in the 1970s and early 1980s. Here, our interest is not on the format/standards aspect of these offerings, but rather that competition between different varieties of a product resulted in a superior outcome than if competition had not occurred at all. Beta was the first successful consumer video format, but lost the "war" following the entry of VHS. VHS prevailed in competition with Beta in large part due to its superiority in terms of price and recording time, both of which resonated with consumers. Although Beta was slightly higher quality, for most consumers the quality differences did not justify the higher price or shorter recording time. Had Beta been imposed on the market by fiat, consumers would likely have suffered considerable detriment compared to the situation of competition between competing technologies that in fact prevailed, delivering greater functionality and lower prices.

89 See https://www.statista.com/chart/1435/top-10-countries-by-app-usage/. See also an earlier 2012 report: Google, *Our Mobile Planet: Australia, Understanding the Mobile Consumer*, May 2012, available at: http://www.fusion.com.au/ourdigitalstate/2012/our_mobile_planet_australia_en.pdf.

89. Similarly, if Apple Pay maintains freedom from competition from rival integrated mobile wallets on iOS devices, it is likely that there will be less dynamic competition in relation to such mobile wallets. Dr Pleatsikas asserts that "[o]ver the long run, because dynamic efficiency is [sic] most powerful force for delivering economic benefits, it is an important consideration for economic policy analysis".[90] On this we agree, and consider that a waiver or relaxation of Apple Pay exclusivity in relation to NFC functionality in iOS devices would significantly enhance dynamic efficiency by enabling competition and consumer choice among a variety of integrated mobile wallets on iOS devices.

3.1.4. Standardisation

90. Dr Pleatsikas asserts that "standardisation and/or marketplace consolidation (not necessarily on one product, but on relatively few products that may still be differentiated) can provide substantial efficiency benefits".[91] In his opinion, the proposed conduct "could retard any potential movement toward more standardised and/or industry leading products that could increase consumer acceptance, adoption and usage of mobile wallet products".[92] He notes that "the CRA Report does not consider the impact of the use of standardised mobile wallet products on competition in the banking industry (e.g. if the proposed conduct made it easier for banks to deploy their own proprietary mobile wallet products, this could increase switching costs for banking services products for consumers)."[93]

91. It is not clear what Dr Pleatsikas means to convey with his references to "standardisation" over and above his references to the concepts of "marketplace consolidation" and "industry leading products" or beyond his concern about fragmentation delaying consumer adoption of mobile wallet products. It is also entirely unclear why Dr Pleatsikas considers that there might be efficiency benefits to be gained from limiting consumer choice of integrated mobile wallets on iOS devices to *Apple Pay alone*, even if there may be some benefits from "marketplace consolidation" or having "industry leading products".

92. Regarding "standardisation", Dr Pleatsikas appears to be suggesting that Apple Pay in itself offers some kind of "standard". However, "standardisation" is usually discussed in economics in relation to contexts where compatibility in systems is important, and where standards can facilitate the development of complementary technologies by third parties and/or network effects (e.g. common languages). Dr Pleatsikas does not point to any compatibility issues or network effects *in the provision of mobile wallets*, and we also cannot

90 Pleatsikas report, paragraph 20, p. 10.

91 Pleatsikas Report, paragraph 79, p. 30. The parenthetical remark in the quote is significant, given that Apple and Dr Pleatsikas would appear to prefer that there be only one integrated mobile wallet on iOS devices (i.e. Apple Pay).

92 Pleatsikas Report, para 79, p. 30.

93 Pleatsikas Report, para 79, p. 30

think of any, other than the need for integrated mobile wallets to be compatible with and access the NFC functionality in mobile devices.[94]

93. In summary, Dr Pleatsikas' concept of a "standardised" mobile wallet product appears to be simply one that has gained widespread market acceptance. As a result, any suggestion that there might be efficiency benefits from Apple Pay remaining as the only integrated mobile wallet on iOS devices is based on this concept alone. In our opinion, consumers would benefit significantly from variety and choice among integrated mobile wallets on iOS devices, some of which will likely become "industry leading" over time, compared to if they were only allowed one integrated mobile wallet option (Apple Pay), notwithstanding that, by default, this one option may become "industry leading" by virtue primarily of its exclusivity on iOS devices.

3.1.5. Proprietary systems

94. Dr Pleatsikas' report asserts that a "possible implication" in the first CRA report is that Apple's strategy of pursuing a proprietary system may be anti-competitive in some manner.[95] It asserts that "there is no economic principle that would automatically condemn a firm for perceiving strategic advantage in utilising a proprietary standard (or a proprietary system) to compete against other firms. While it is conceivable that such a strategy could be used anti-competitively under certain marketplace conditions, it can be procompetitive under other conditions."[96]

95. The first CRA report made no assertion as to the pro- or anti-competitive nature of proprietary systems generally. We agree that the maintenance of a proprietary system can, in some circumstances, be considered procompetitive, particularly if it provides strong incentives for dynamic efficiency. However, in other circumstances, the maintenance of a proprietary system can significantly impede competition and act to entrench a single player at a downstream level, thereby limiting competition and the incentives that potential competitors have to invest in new products.[97]

96. There are numerous instances in which competition authorities have considered the maintenance of proprietary systems to have had anti-competitive effects. For example, in its 2004 decision against Microsoft, the European Commission (EC) found that Microsoft had abused its dominant position by refusing to supply interoperability information and allow its use of that information by third parties for the purpose of developing and distributing

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94 There are of course significant compatibility issues and network effects associated with Apple's *iOS ecosystem*, which provides an intermediary platform between application developers and iOS device users. However, we do not see any significant compatibility issues or network effects associated with the *provision of mobile wallets*, other than the need for integrated mobile wallets to be compatible with and access the NFC functionality in mobile devices.

95 Pleatsikas Report, para 82, p. 31.

96 Pleatsikas Report, para 55.d, p. 22.

97 For a general discussion of open and closed systems, which acknowledges the potential for anti-competitive effects of closed systems, see Competition and Markets Authority and Autorite de la Concurrence (2014), *The economics of open and closed systems*, 16 December 2014.

work group server operating system products.[98] In that case the EC found that Microsoft's refusal risked eliminating competition because the refused input was indispensable for competitors operating in the relevant market. It also found that Microsoft's refusal was likely to limit technical development to the prejudice of consumers: if competitors had access to the refused information, they would be able to provide new and enhanced products to consumers. As a result, the EC found that Microsoft's refusal harmed consumers. Microsoft's claimed justification for its refusal was that providing the information at stake and allowing competitors to use it in order to make compatible products would be tantamount to licensing intellectual property rights. However, the EC considered that an undertaking's interest in exercising its intellectual property rights cannot in itself constitute an objective justification. In coming to its view, the EC took account of the fact that disclosure of information of the kind refused by Microsoft was commonplace in the industry.

97. More recently, the EC has issued Google with a Statement of Objections in relation to the use of its proprietary search engine.[99] The EC considers that Google has abused its dominant position by systematically favouring its own comparison shopping service in its search result pages, thereby diverting traffic from rival comparison shopping services and hindering their ability to compete on the market to the detriment of consumers (and innovation). The remedy proposed by the EC is for Google to amend its proprietary search system to ensure that it treat its own comparison shopping service and those of rivals in the same way.

98. The EC has also recently issued Google with a separate Statement of Objections that includes an objection to Google's practice of tying certain apps (in particular, Google Search and Google's Chrome internet browser) to other apps that are "must haves" for manufacturers to preload on Android devices (in particular, Google Play).[100] Although this does not concern maintenance of a closed proprietary system, the concept of leveraging from "must have" products to extend market power into other products is similar. The EC considers that by tying Google Search and Google Chrome, and, moreover, requiring that Google Search be the default search app on devices (a form of exclusivity), competition from other search apps and other browsers has been reduced and consumers have been harmed. The EC states:[101]

> *The Commission's investigation showed that it is commercially important for manufacturers of devices using the Android operating system to pre-install on those devices the Play Store, Google's app store for Android. In its contracts with*

98 Commission Decision of 24 May 2004 relating to a proceeding pursuant to Article 82 of the EC Treaty and Article 54 of the EEA Agreement against Microsoft Corporation (Case COMP/C-3/37.792 — Microsoft) (notified under document number C(2004) 900) at http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32007D0053. In the same case, the EC found that Microsoft had abused its dominant position by tying its Windows Media Player (WMP) with the Windows operating system.

99 European Commission, Antitrust: Commission sends Statement of Objections to Google on comparison shopping service; opens separate formal investigation on Android,15 April 2015 at http://europa.eu/rapid/press-release_IP-15-4780_en.htm and European Commission, Antitrust: Commission takes further steps in investigations alleging Google's comparison shopping and advertising-related practices breach EU rules, 14 July 2016, see: http://europa.eu/rapid/press-release_IP-16-2532_en.htm.

100 European Commission, Antitrust: Commission sends Statement of Objections to Google on Android operating system and applications, 20 April 2016. See: http://europa.eu/rapid/press-release_IP-16-1492_en.htm.

101 Above note 100.

> *manufacturers, Google has made the licensing of the Play Store on Android devices conditional on Google Search being pre-installed and set as default search service. As a result, rival search engines are not able to become the default search service on the significant majority of devices sold in the EEA. It has also reduced the incentives of manufacturers to pre-install competing search apps, as well as the incentives of consumers to download such apps.*
>
> *Similarly, in its contracts with manufacturers Google also required the pre-installation of its Chrome mobile browser in return for licensing the Play Store or Google Search. Thereby, Google has also ensured that its mobile browser is pre-installed on the significant majority of devices sold in the EEA. Browsers represent an important entry point for search queries on mobile devices. Thus, by reducing manufacturers' incentives to pre-install competing browser apps and consumers' incentives to download those apps, competition in both mobile browsers and general search has been adversely affected.*

99. In the context of the current authorisation, the relevant question is not whether the maintenance by Apple of a closed system with respect to NFC functionality in iOS devices represents a misuse of market power, but whether the proposed conduct that is the subject of the application is likely to result in public benefits that outweigh any potential public detriments. In our opinion, there would likely be net public benefits if the applicants were able to collectively negotiate with Apple with the aim of obtaining access to the NFC functionality in iOS devices. Such access would significantly enhance competition in the provision of integrated mobile wallet products, resulting in potentially significant public benefits with very limited associated public detriments.[102]

100. In our opinion, there should be no presumption of a blanket immunity for proprietary systems, particularly where the supply of access to NFC functionality in iOS devices is likely to significantly enhance competition in the supply of mobile wallet products. The fact that both Samsung and Google are willing to (and do) provide access to the NFC functionality in their Android devices suggests that such refusal to supply is not commonplace in the industry. Moreover, as noted in the first CRA report, one of the keys to Apple's iOS device success has been its willingness to supply access to its proprietary system in other contexts, allowing the development of numerous applications with functions and features that greatly enhance the value of iOS devices and the adoption of new device functionalities by consumers.[103]

3.2. Pass-through

101. The potential benefits of collective negotiation in relation to restrictions on pass-through of Apple's fees for use of Apple Pay are primarily in the event that exclusivity for Apple Pay as an integrated mobile wallet on iOS devices is not waived or relaxed.

102. As explained in Section 6.4 of the first CRA report, if exclusivity is waived or relaxed and there is competition between integrated mobile wallets on iOS devices, this competition is likely to constrain the ability of Apple to charge high fees.[104]

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102 First CRA Report, sections 6 and 7, pp. 24 – 38.

103 First CRA Report, paragraphs 96-97, p. 25.

104 See, in particular, paragraphs 117-118 of the first CRA report.

103. However, if exclusivity is not waived or relaxed, Apple Pay will not face any competition from integrated mobile wallets on iOS devices. As argued in the first CRA report, in this situation, if there are restrictions on pass-through of Apple's fees for Apple Pay, Apple is likely to charge excessive amounts for use of Apple Pay (above the fee levels that would exist if there were competition from other integrated mobile wallets on iOS devices or signalling of fees to consumers), competition between payment methods will be distorted, there will be inefficient overuse of Apple Pay and the incidence of Apple's fees will be spread over all banking customers, rather than just those that use Apple Pay.[105]

104. As explained in Section 8 of the first CRA report, collective negotiation offers the potential for the applicants to obtain a waiver or relaxation of Apple's demands in relation to restrictions on pass-through. This would bring with it the *option* for the applicants to set price signals to their customers that reflect the additional costs to issuers of customers using Apple Pay (i.e. Apple's fees)[106] and to recover those costs from the customers that cause them. If the option were exercised, pass-through would result in consumers making more efficient decisions when deciding between different methods of payment (avoiding overuse of Apple Pay), and avoid the distributional inefficiencies and inequities that arise when costs are recovered across all consumers rather than those that cause them. Moreover, successful negotiation of the *option* to pass-through Apple's fees, even if this option is not exercised, is likely to constrain Apple from charging excessive fees (as the higher the fees that Apple charges, the more likely the option would be exercised).[107]

105. Dr Pleatsikas makes a number of distinct comments in relation to pass-through.

    a. First, Dr Pleatsikas argues that Apple's fees will not be excessive because they are likely to be significantly constrained by the regulation of interchange fees by the Reserve Bank of Australia (RBA).[108]

    b. Second, Dr Pleatsikas asserts that there are "benefits provided by Apple Pay to the banks (or consumers or merchants), including any cost savings the banks (or others) might experience",[109] that Apple's fees may reflect these benefits, and if so, Apple's fees would not be excessive,[110] and "if the benefits to issuers are sufficient, allowing them to [pass-through Apple's fees] might result in inefficient under-utilisation of Apple Pay".[111]

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105 See paragraphs 118-122 of the first CRA report.

106 In theory, the additional costs to issuers of use of Apple Pay will be Apple's fees less any benefits to issuers of use of Apple Pay. However, in practice, for the reasons explained below, the benefits to issuers of Apple Pay that are not based on Apple's exclusivity in relation to integrated mobile wallets on iOS devices are likely to be zero (if not negative).

107 In this regard, we understand that the ability of merchants to surcharge American Express Card payments in Australia has been used by merchants as a bargaining chip in negotiating lower merchant service fees on American Express card transactions.

108 Pleatsikas report, paragraph 61, p. 24 and see also paragraph 58, p. 23.

109 Pleatsikas report, paragraph 63, p. 24.

110 Pleatsikas report, paragraphs 63-64, pp. 24-25.

111 Pleatsikas report, paragraph 64, p. 25.

c. Third, Dr Pleatsikas asserts that there may be "competitive implications" of pass-through. Dr Pleatsikas asserts that: "[i]f the banks, which are Apple's competitors, can charge customers for transaction fees if the customers use Apple Pay, but the banks do not charge transaction fees for their own mobile wallet products, the banks could place Apple Pay at a competitive disadvantage, which could distort competition in mobile wallet products."[112] Dr Pleatsikas also asserts that "pass-through could be used as a competitive tool by the banks to disadvantage Apple Pay in favour of the bank's own mobile wallet products."[113]

d. Fourth, even if Dr Pleatsikas were to accept a (greater) deviation from efficient fee levels in the counterfactual, in his view such an outcome would not justify authorisation of collective negotiation and collective boycott in relation to restrictions on pass-through.[114] His argument here seems to be limited to observations that regulatory interventions are costly and uncertain.[115]

e. Finally, Dr Pleatsikas argues that the RBA's intervention to remove card schemes' "no surcharge" rules is not analogous to the situation of the applicants seeking to have Apple's no pass through rule waived.[116]

106. We discuss each of these comments in turn below.

3.2.1. Regulation of interchange fees

107. Dr Pleatsikas incorrectly attributes to CRA reliance on the level of Apple's US transaction fees (in an unregulated interchange fee environment) over the level of Apple's UK transaction fees (in a regulated interchange fee environment).[117] Dr Pleatsikas does not refer in this respect to any paragraph of the first CRA report. In fact, the first CRA report did not engage in any such reliance and did not mention either the US or UK fee levels.

108. We accept that, all else equal, it is likely that Apple's fees will be lower in countries where interchange fees are lower, simply because where interchange fees are lower, issuers are likely to have lower willingness to pay for payment methods that facilitate card transactions. This is likely to narrow the bargaining range over Apple's fees. However, whether Apple's fees will be excessive relative to the fees that it would charge if exposed to competition from rival integrated mobile wallets on iOS devices, and whether there would be benefits from constraining Apple's fees below excessive levels (either through relaxation of exclusivity or restrictions on pass-through) are matters that are *independent* of the level of interchange fees.

109. First, as a general observation, there is no obvious reason in principle why Apple's fees would be capped by interchange fee levels. Second, and more importantly, even fees for Apple Pay well below the level of interchange fees could still be excessive relative to the

112 Pleatsikas report, paragraph 59, pp. 23 - 24.

113 Pleatsikas report, paragraph 62, p. 24.

114 Pleatsikas report, paragraph 66, p. 25.

115 Pleatsikas report, paragraph 66, p. 25.

116 Pleatsikas report, paragraph 67, p. 26.

117 Pleatsikas report, paragraph 58, p. 23.

fees that Apple would charge if exposed to competing integrated mobile wallets on iOS devices. Any charge imposed by Apple above that competitive level will represent an additional cost to the financial system that will ultimately be borne, at least in part, by consumers. The potential for collective negotiation over pass-through to constrain Apple's fees below excessive levels is therefore a clear public benefit.

3.2.2. Existence and relevance of benefits of Apple Pay

110. Dr Pleatsikas asserts that, absent an analysis of the benefits provided by Apple Pay to the applicants, consumers or merchants (including any cost savings), there is no way to determine whether any particular fee level for Apple Pay would be excessive,[118] and if the benefits to the issuers are sufficient, allowing them to pass-through Apple's fees might result in inefficient under-utilisation of Apple Pay.[119]

111. *In principle*, if there are benefits to issuers of use of Apple Pay compared to alternative payment methods (including the issuers' own integrated mobile wallets on iOS devices), and if Apple's fees no more than reflect those benefits, Apple's fees would not be excessive. The same has been said of "tourist test" interchange fees set by card systems that reflect only the convenience benefits to merchants of card transactions compared to other types of transactions.[120] Also, if Apple's fees are no greater than the benefits to issuers over alternative payment methods, then pass-through of any proportion of Apple's fees to consumers would be likely to result in inefficient under-utilisation of Apple Pay.

112. However, *in practice*, having regard to the nature and characteristics of Apple Pay compared to contactless cards and other integrated mobile wallets, the benefits to issuers of Apple Pay over these alternatives are likely to be non-existent (if not negative). The first CRA report implicitly assumed that there were no such benefits to issuers, and on that basis reached the conclusion that full pass-through of Apple's fees would be efficient and would avoid inefficient over-utilisation of Apple Pay. Having further analysed this matter (below), we are of the opinion that this implicit assumption was reasonable and the conclusion was valid.

113. In any event, even if there are benefits for issuers of use of Apple Pay instead of alternative payment methods, this does not alter our conclusion that, if Apple maintains exclusivity for Apple Pay on iOS devices, Apple's fees would likely be excessive, as they would likely exceed the level that Apple would be able to sustain if facing competition from other

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118 Pleatsikas Report, paragraph 63, p. 24.

119 Pleatsikas Report, paragraph 64, p. 25.

120 The "tourist test" fee level in the interchange fee context is considered an important benchmark for the regulation of interchange fees: see, for example, Helene Bourguignon, Renato Gomes and Jean Tirole (2014), "Card Surcharges and Cash Discounts: Simple Economics and Regulatory Lessons," 10(2) *Competition Policy International*, pp.13-27. Interchange fees are at "tourist test" levels if the fees reflect the merchant's convenience benefit of a card transaction relative to a cash payment, conditional on the customer being able and willing to pay via either method. If interchange fees are at "tourist test" levels, the merchant is indifferent between customers paying by card or cash, as the costs of card payments (the interchange fee) reflect the benefits to the merchant of avoiding cash payments. Interchange fees above the tourist test level are considered excessive relative to this benchmark. In the present context, Apple sits in the place of the card systems and the issuers sit in the place of merchants. In principle, issuers would be indifferent between customers paying by Apple Pay and paying by their own integrated mobile wallets if the fee for Apple Pay was equal to the additional benefits to issuers of payments via Apple Pay compared to payments via their own integrated mobile wallets.

integrated mobile wallets on iOS devices.[121] In this sense, the existence or otherwise of benefits to issuers from Apple Pay is irrelevant to the assessment of whether Apple's fees are likely to be excessive. Moreover, if there are benefits of Apple Pay for issuers, although 100% pass-through may not be efficient, some pass-through (somewhere between 0% and 100%) would be, where the efficient pass-through would reflect the difference between Apple's fees and the benefits to issuers.

114. The remainder of this sub-section considers the benefits of Apple Pay (to issuers, consumers and merchants) and comments further on the relevance of any such benefits.

Benefits of Apple Pay

115. Dr Pleatsikas does not identify the nature of any benefits or cost savings to issuers, consumers or merchants that are specific to Apple Pay (as opposed to mobile wallets generally). He asserts that "the adoption of mobile wallet products is likely to result in significant efficiency benefits",[122] but this is a statement about mobile wallets generally, and Dr Pleatsikas does not reference any particular feature or functionality of Apple Pay that is significantly different from, and so superior to other mobile wallets, as to justify fees being charged for Apple Pay when other third party mobile wallet providers (e.g. Google and Samsung) do not charge fees.

116. Dr Pleatsikas' assertion that "it is likely that the adoption of Apple Pay would provide significant benefits (to multiple parties, including issuing banks)" is based on broad statements such as "Apple's reputation for developing superior products".[123] These statements do not engage with the particular characteristics, features and functionality of different mobile wallets including Apple Pay. Dr Pleatsikas also does not clarify whether the benefits that he sees for issuers exist only in the counterfactual (in which Apple Pay would be the exclusive integrated mobile wallet on iOS devices) or also in a factual in which exclusivity was waived or relaxed and Apple Pay faced competition from other integrated mobile wallets on iOS devices.

117. We therefore engage in our own consideration of the benefits to issuers, consumers and merchants that might be specific to Apple Pay. This includes consideration of whether any such benefits would exist only due to Apple maintaining exclusivity for Apple Pay as the only integrated mobile wallet on iOS devices or also if Apple Pay faces competition from other integrated mobile wallets on iOS devices.

118. It is important, at the outset, to rule out private benefits to issuers in a zero sum game in which there is no industry benefit.[124] As explained in Section 4 of the first CRA report, issuers are likely to perceive benefits from joining Apple Pay in order either to obtain a competitive advantage over other issuers (in terms of offering iOS device users the ability to make integrated mobile payments with their iOS devices) or to neutralise the competitive advantages of other issuers that are also joining. These are private benefits in a zero sum game between issuers, and do not represent intrinsic benefits of Apple Pay for the industry

121 See first CRA report, paragraphs 117-118.

122 Pleatsikas Report, paragraph 63, p. 24.

123 Pleatsikas Report, paragraph 63, p. 25

124 In game theory and economic theory, a zero-sum game is a situation in which each player's gain (or loss) from an action is exactly balanced by losses (or gains) for the other players.

as a whole. Neither Dr Pleatsikas, nor Apple suggest that these kinds of benefits are benefits of Apple Pay that justify Apple's fees, and rightly so.

119. In its own submission, Apple expresses the benefits that Apple Pay offers to issuers as related to generating "broader digital engagement with consumers and their banks".[125] In full, Apple states:

> *Apple's philosophy with respect to Apple Pay related fees are that Apple Pay helps create broader digital engagement with consumers and their banks. 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 the apps and reduce service calls by messaging customers more proactively through front of pass messaging and notifications capabilities. Banks broadly reap many benefits from increased digital engagement with their customers, enabling both increased revenue as well as lower costs. Apple has invested deeply in the new security, NFC radio and software capabilities to enable new forms of mobile payment and the banks on the Apple platform share in that value creation with Apple.*[126]

120. However, despite this statement, it is not clear to us that Apple Pay delivers to the issuers significantly greater digital engagement with their customers than that which the issuers would derive if these customers were to use an alternative payment method, such as "tap and go" using their contactless cards.[127] Our understanding is that, currently, the Apple Pay third party mobile wallet is limited in terms of its integration with the applicants' mobile banking applications. While it is possible within Apple Pay to see recent transactions associated with a card (which is also possible within an issuer's mobile banking app), there is currently no capability to view (before and immediately after the payment) account balances and credit limits, be informed immediately of reasons for failed payments, make transfers between accounts or through BPay, or change security settings. Therefore, the functionality offered by Apple Pay appears to offer the issuers little greater "digital engagement" with customers than if those customers were simply to use their contactless cards together with a mobile banking app.

121. In any event, even if Apple Pay does (or may in the future) deliver to issuers greater digital engagement of customers than contactless card payments, issuer proprietary integrated mobile wallets offer issuers *significantly greater digital engagement* with their customers than Apple Pay. As explained in Section 2.3 of the first CRA report, issuer proprietary integrated mobile wallets allow customers to check account balances and credit limits (before and immediately after payments), be informed immediately of reasons for failed payments, make transfers between accounts and BPay transfers, and change security

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125 Another argument might be that there is the potential for Apple Pay to drive greater migration of payments from cash. However, unlike in the US, there is already widespread adoption of contactless card payments in Australia by consumers and merchants, meaning that Apple Pay payments are likely to largely substitute for contactless card payments rather than cash payments. Also, any benefit of migrating payments away from cash would only be attributable to Apple Pay due to the exclusivity that Apple maintains for Apple Pay as the only integrated mobile wallet on iOS devices – as explained in the main text in the context of "greater digital engagement", such benefits are not specific to Apple Pay and fees for Apple Pay that reflect such benefits may still be considered excessive.

126 Apple's Second Submission, Section 4.9.

127 It is possible that iOS users that choose to use Apple Pay may be more inclined than otherwise to download and use the mobile banking application offered by their primary financial institution, however such a dynamic is not clear, and it would depend on there being limited pre-existing penetration among iOS users of such applications.

settings (such as whether to allow overseas payments). Where the issuer is a bank, it is possible for the integrated mobile wallet to be used not only to make payments, but also to make withdrawals from ATMs. Where the issuer is a merchant (e.g. Coles) the integrated mobile wallet may facilitate close integration between payments and loyalty programs of that merchant.

122. Therefore, any benefits that issuers may derive from greater digital engagement of customers using Apple Pay are not intrinsic to Apple Pay. To the extent that they may be attributable to Apple Pay, this will only be due to the *exclusivity* that Apple maintains for itself in favour of Apple Pay. Fees for Apple Pay that reflect these benefits are therefore essentially rents that accrue to Apple due to the exclusivity, and are excessive compared to the fees that Apple would be likely to charge if Apple Pay were exposed to competition from other integrated mobile wallets on iOS devices.

123. In summary, the benefits to *issuers* of Apple Pay appear limited even in the context of exclusivity, and there do not appear to be any benefits for issuers that are specific to Apple Pay and would not equally be realised by issuers via other integrated mobile wallets on iOS devices if exclusivity were waived or relaxed. Therefore, any benefits that Apple Pay may bring to issuers when enjoying exclusivity on iOS devices would likely be due to that exclusivity only and would not deny the likely excessive nature of the fees that Apple would charge to extract those benefits by virtue of being free from competition from other integrated mobile wallets. The finding that there are no Apple Pay specific benefits to issuers also implies that pass-through of Apple's fees would be efficient and would avoid inefficient over-utilisation of Apple Pay, as the first CRA report concluded.

124. If, as Dr Pleatsikas alternatively speculates, Apple Pay provides benefits to *consumers* relative to the use of other payment methods (although Dr Pleatsikas does not identify any particular benefits), and if Apple's fees for Apple Pay reflect these benefits, it is unclear why consumers should not be willing to pay Apple's fees to enjoy these benefits (and so it is unclear why Dr Pleatsikas should object to pass-through of Apple's fees). Nor is it clear why Dr Pleatsikas considers that other consumers should subsidise the benefits that may be derived by Apple Pay users.

125. Regarding benefits to *merchants*, no specific benefits have been identified by Dr Pleatsikas or the Apple submission, and we have not been able to identify any Apple Pay specific benefits either.[128] For merchants such as Coles that are also issuers, a proprietary integrated mobile wallet may deliver benefits from closer integration of mobile payments with loyalty scheme programs, however Apple Pay would not offer those benefits.

Relevance of benefits of Apple Pay

126. Having considered the existence of benefits specific and intrinsic to Apple Pay, and concluded that there likely are none, we add here a number of comments to clarify the relevance of benefits of Apple Pay in the alternative that there are some benefits. In the

128 By "Apple Pay specific benefits", we again mean benefits that are attributable intrinsically to Apple Pay and not to its exclusivity as an integrated mobile wallet on iOS devices. In other words, we mean benefits provided to merchants by Apple Pay that other integrated mobile wallets on iOS devices would not equally provide. It may, for example, be argued that merchants may benefit from consumers making more transactions, or that merchants may benefit from greater security of payments. However, other integrated mobile wallets on iOS devices would be likely to offer those same benefits and so these benefits are not likely to be specific to Apple Pay, distinct from its exclusivity.

remainder of this section references to "benefits" of Apple Pay are references to benefits that are specific and intrinsic to Apple Pay compared to use of alternatives including the issuers' own integrated mobile wallets.

127. First, as mentioned, even if there are benefits, our argument is that Apple's fees are likely, *in the counterfactual in which Apple Pay would enjoy exclusivity on iOS devices*, to exceed the level that Apple would be able to sustain if facing competition from other integrated mobile wallets on iOS devices, and are likely to be excessive in that sense. In other words, the existence or otherwise of benefits from Apple Pay is *irrelevant* to the assessment of whether Apple's fees in the counterfactual are likely to be excessive.

128. Second, if there are benefits to issuers, and if Apple's fees *exceed* those benefits (as we would expect to be the case if Apple maintains exclusivity for Apple Pay), the existence of these benefits would suggest that efficient pass-through would be less than 100% of Apple's fees, but it would still be efficient for there to be pass-through of somewhere between 0% and 100% of Apple's fees, with the efficient pass-through reflecting the difference between Apple's fees and the benefits to issuers that are specific to Apple Pay.

129. Third, if there are benefits to issuers, and if Apple's fees are *less than* those benefits, leaving issuers with some net benefits of each Apple Pay transaction, issuers would be unlikely to pass-through the fees as this would discourage the use of Apple Pay and deny issuers these net benefits. In other words, as long as Apple does not set fees above the benefits to issuers, issuers should not have incentives to pass-through.

130. Finally, if there are benefits to consumers, and if Apple's fees reflect these benefits, it would be efficient for Apple's fees to be passed through to be signalled to users of Apple Pay rather than be absorbed by the issuers or recovered across all consumers (as would likely be the case).

3.2.3. Competitive implications from pass through

131. Dr Pleatsikas asserts that "[i]f the banks, which are Apple's competitors, can charge customers for transaction fees if the customers use Apple Pay, but the banks do not charge transaction fees for their own mobile wallet products, the banks could place Apple Pay at a competitive disadvantage, which could distort competition in mobile wallet products."[129] Dr Pleatsikas also asserts that "pass-through could be used as a competitive tool by the banks to disadvantage Apple Pay in favour of the bank's own mobile wallet products."[130]

132. First, as observed in the first CRA report (see paragraph 58), as long as Apple does not set very high fees, issuers would be unlikely to impose charges for using Apple Pay even if they are allowed to. Such charges are unpopular with customers, and given the importance to issuers of iOS device users as a customer segment, issuers may be wary of imposing charges on that segment that relate to their use of Apple Pay. However, having the *option* to pass-through is likely to be in the public interest because, even without being exercised, the option in itself may act to constrain Apple's fees below excessive levels.

129 Pleatsikas report, paragraph 59, pp. 23 - 24.

130 Pleatsikas report, paragraph 62, p. 24.

133. Second, as also observed in the first CRA report (see paragraph 159, which is based on the assumption that there would be no benefits to issuers), pass-through, if it were to occur, should no more than reasonably reflect Apple's fees for Apple Pay.

134. Third, maintaining the assumption that there are no benefits to issuers (as we consider to be the likely case), 100% pass-through of Apple's fees would be consistent with competition, and not a distortion of competition as Dr Pleatsikas suggests.[131] It is consistent with competition that firms reflect marginal costs in their prices. Since Apple's fees for Apple Pay would, in this case, represent additional marginal costs for issuers of transactions using Apple Pay (compared to transactions using contactless cards or other mobile wallets), it would be consistent with competition (not a distortion of competition) for issuers to pass-through those additional marginal costs to be reflected in prices to consumers. Looking at things the other way, if there are no benefits to issuers, Apple's restrictions on pass-through represent a distortion of competition, as they preclude prices to consumers reflecting marginal costs. This is likely to lead to inefficient overuse of Apple Pay and underuse of other payment methods, and to consumers that do not use Apple Pay subsidising consumers that do.

135. Fourth, if, instead, there are benefits to issuers, and if Apple's fees exceed those benefits (as we consider would be likely if Apple maintains exclusivity for Apple Pay), 100% pass-through may distort competition. However, a level of pass-through reflecting the difference between Apple's fees and the benefits to issuers would not. Benefits to issuers from Apple Pay could be reflected in the negotiations. In this situation (i.e. if Apple's fees exceed the benefits to issuers), Apple's restriction on any pass-through at all again represents a distortion of competition and is likely to lead to inefficient overuse of Apple Pay and cross-subsidisation of Apple Pay by other consumers.

136. Fifth, as mentioned above, if there are benefits to issuers, and if Apple's fees are less than those benefits, leaving issuers with some net benefits of each Apple Pay transaction, issuers would be unlikely to pass-through the fees, as this would discourage the use of Apple Pay and deny the issuers the net benefits.

137. Sixth, if it is the case that, for some reason, Apple Pay delivers benefits to consumers over and above the benefits delivered to consumers by other payment methods, and if Apple's fees for Apple Pay (or the excess of Apple's fees over benefits to issuers if there are benefits to issuers) reflect those consumer benefits, it would again be consistent with competition (not a distortion of competition) for those fees to be passed through to consumers. Higher prices for higher valued products, where the higher prices reflect greater value and willingness to pay, are typical in competition between differentiated products.[132]

138. Finally, if Apple does not wish Apple Pay to be priced higher than other payment methods, a simple solution is in Apple's hands: not charge fees for Apple Pay or not charge fees that exceed the benefits to issuers (which is the same thing, if benefits to issuers are zero, as

131 Pleatsikas Report, paragraph 64, p. 25.

132 Dr Pleatsikas recognises this at paragraph 44, p. 18, where he states "price differences among different types of products do not preclude competition among them in a single relevant market, particularly when those price differences are a reflection of perceived quality differences. Price differences based on quality differentials persist in many markets.

we consider to be the case). Other third party mobile wallet providers (e.g. Google and Samsung) do not charge fees for use of their mobile wallets and generate revenues in other ways. In other words, the "competitive implications"[133] that concern Dr Pleatsikas would be brought upon Apple by its own decision to charge fees for Apple Pay, and Apple would be able to avoid those implications by setting lower fees or no fees at all for Apple Pay. Indeed, as mentioned, as long as Apple's fees are no greater than the benefits to issuers of Apple Pay, issuers will not have incentives to pass-through Apple's fees.

3.2.4. Regulatory interventions

139. Even if Dr Pleatsikas were to accept a (greater) deviation from efficient prices in the counterfactual, in his view such an outcome would not justify authorisation of collective negotiation.[134] His view here seems to be that *regulatory intervention* is not generally employed wherever there are deviations in prices from efficient levels because, as he asserts, "regulatory intervention itself imposes costs" and "it is not necessarily easy to determine how deviations from efficient prices should be adjusted".[135]

140. Dr Pleatsikas' reference to "regulatory intervention" appears to misunderstand the nature of the authorisation application. This matter concerns an application for authorisation of collective negotiation, to be determined by the ACCC on the basis of an assessment of public benefits and detriments, not a regulatory proceeding by a sector regulator to determine whether to regulate certain prices and at precisely what level.

141. All that the application for authorisation would do, if approved, is allow for collective rather than individual negotiation over matters such as exclusivity and pass-through. It would be a matter for the negotiating parties to determine whether exclusivity would be waived or relaxed in some way, and whether restrictions on pass-through should remain, and if not, the level of pass-through that would be permitted. There would be no regulatory intervention in relation to Apple's fees, no need to determine the "efficient" level of Apple's fees, and no regulatory intervention in relation to pass-through or the level of pass-through. The costs and uncertainty of regulation that concern Dr Pleatsikas are simply non-existent in this context.

142. Having ruled out the cost and uncertainty of regulation, there seems no remaining basis for Dr Pleatsikas' objection to authorisation of collective negotiation to attempt to correct a market failure.

3.2.5. The relevance of the RBA's intervention to remove "no surcharge" rules

143. Dr Pleatsikas appears to dispute the analogy drawn in the first CRA report between the proposal for collective negotiation to try to have Apple's restrictions on pass-through of Apple Pay fees waived or relaxed, and the RBA's intervention to remove card schemes'

133 Pleatsikas report, paragraphs 59 and 62, pp. 23 – 24.

134 Pleatsikas report, paragraph 66, p. 25.

135 Pleatsikas report, paragraph 66, p. 25.

"no surcharge" rules.[136] Dr Pleatsikas asserts, in particular, that the RBA was concerned with a "significant market failure in that four-party credit card schemes had no incentives to reduce interchange fees […] and the purported high level of interchange fees had a significant impact on merchant costs"[137] and that "[n]o such significant market failure appears to be at issue here".[138]

144. Dr Pleatsikas does not explain why there is no analogous market failure. As explained in Section 2.3 of this response (and as is also apparent from Sections 4, 6 and 8 of the first CRA report), in our view there is indeed an analogous market failure here, which is that in the counterfactual:

    a. Apple will face no competition from other integrated mobile wallets on iOS devices;

    b. Apple will have no incentive to reduce its fees for use of Apple Pay below excessive levels; and

    c. consumers will be unaware of the additional costs of using Apple Pay compared to other payment methods and will tend to inefficiently over-use Apple Pay as a result.

145. Moreover, the incidence of Apple's fees will be spread over all banking customers, rather than just those that cause the fees. These are the same market failure concerns that motivated the RBA when it removed the card schemes' "no surcharge" rules. As the RBA and the ACCC stated in that context:

> *"no surcharge" rules suppress price signals that guide efficient allocation of resources. They result in cross-subsidisation of cardholders by consumers who do not use credit cards; they restrict competition between merchants by limiting the range of pricing strategies they can use; and they prevent end-users exerting competitive pressures on merchant service fees and interchange fees. On balance, the study concludes that 'no surcharge' rules are not desirable. Merchants should not be prevented by the credit card schemes from passing on some or all of the merchant service fee through surcharges, even if some merchants do not avail of the flexibility for their own commercial reasons.*[139]

146. Perhaps, rather than countering the existence of an analogous market failure, Dr Pleatsikas only seeks to argue that if an analogous market failure exists, it is not a "significant" market failure.[140] He argues that the "scale" of the issue in relation to Apple Pay is "likely to be of far less concern" than the issue in relation to interchange fees.[141] However, as Dr

136 Pleatsikas report, paragraphs 67 – 68, p. 26. It is not entirely clear what Dr Pleatsikas is disputing here. He refers to paragraph 156 of the first CRA report, which is concerned with the RBA's reforms requiring card schemes to remove their "no surcharge" rules. However, at the same time he refers to the RBA's "intervention to regulate interchange fees" and does not refer directly to the "no surcharge" reforms. These are distinct interventions.

137 Pleatsikas report, paragraph 67, p. 26.

138 Pleatsikas report, paragraph 68, p. 26.

139 RBA and ACCC, *Debit and Credit Card Schemes in Australia: A Study of Interchange Fees and Access*, October 2000, page 55, accessed at: http://www.rba.gov.au/payments-system/resources/publications/payments-au/interchg-fees-study.pdf.

140 Pleatsikas report, paragraph 68, p. 26.

141 Pleatsikas report, paragraph 68, p. 26.

Pleatsikas accepts, it is not clear how large Apple's fees will be in the counterfactual,[142] and Dr Pleatsikas' own view of mobile wallet transactions is that they represent a "paradigm shift that will fundamentally alter (and/or disrupt) the character of the payment instruments industry".[143] This suggests that Dr Pleatsikas considers that mobile payments are likely to largely displace contactless card transactions. This is also the view of ANZ chief executive Shayne Elliot and outgoing RBA Reserve Bank assistant governor Malcolm Edey.[144] It is therefore not clear on what basis Dr Pleatsikas concludes that the issue in relation to Apple Pay is "likely to be of far less concern".

3.3. Other detriments suggested by Dr Pleatsikas

147. Dr Pleatsikas alleges that the first CRA report omitted three "significant detriments" associated with the proposed conduct.[145]

    a. The impact of the proposed conduct on non-Apple Third Party Mobile Wallet suppliers. Dr Pleatsikas expresses concern regarding the ability for the applicants to collectively negotiate with any Third Party Mobile Wallet, irrespective of their bargaining (or market) power.[146]

    b. The detriment associated with cartel behaviour. Dr Pleatsikas asserts that a "cartel" of issuers (even one confined to negotiating on exclusivity, pass-through and security standards) "could impose costs […] on Third Party Mobile Wallet product suppliers so as to favour their own […] mobile wallet products over those of third party suppliers" and "entrench less innovative, lower quality products".[147]

    c. The likelihood that the (allegedly) inefficient impacts of the "cartel" could persist beyond the expiration date of the authorised conduct.[148]

148. In our opinion, these do not constitute public detriments that are likely to arise as a result of the proposed conduct. First, the proposed conduct that is the subject of the authorisation is not directed at *all* Third Party Mobile Wallet providers. Rather, as stated in the application for authorisation, the proposed conduct is only directed at those Third Party Mobile Wallet providers that have sufficient bargaining power to impose restrictive terms that would be likely to reduce competition and innovation:

> *…there are some Third Party Wallet Providers who, by reason of their scale and influence, combined with their control of key mobile hardware and/or operating systems, could be in a position to negotiate terms that would be likely to result in reduced competition and innovation, and increased risk in the security and*

142 Dr Pleatsikas states: "there is no information that would enable one to determine what the magnitude of […] mobile wallet transaction fees would be in either the factual or the counterfactual" (Pleatsikas report, paragraph 68).

143 Pleatsikas report, paragraph 9, p. 6.

144 See above note 71 and http://www.afr.com/business/banking-and-finance/financial-services/rbas-malcolm-edey-tips-credit-cards-will-go-the-way-of-cheques-20160928-grq55g.

145 Pleatsikas Report, paras 101 - 105, pp. 39 – 40.

146 Pleatsikas Report, paragraph 101, pp. 39 – 40.

147 Pleatsikas Report, paragraphs 102-103, p. 40.

148 Pleatsikas Report, paragraph 105, p. 40.

> *transparency of mobile payments. The applicants wish to have the ability to engage in limited collective negotiation with Third Party Wallet Providers who are in this position.*[149]

149. Second, Dr Pleatsikas has provided no analysis to support his assertion that the proposed conduct, which he chooses to superficially refer to as a "cartel", is likely to result in inefficient market outcomes or the raising of costs of third party mobile wallet providers. To the extent that this is a repetition of Dr Pleatsikas' assertions earlier in his report regarding the competitive implications of "pass-through", we have analysed these in Section 3.2.3 above and concluded that there is no likelihood of detrimental competitive implications of collective negotiation in relation to pass-through.

150. Third, we have tried, but have been unable to comprehend Dr Pleatsikas' assertion that "the inefficient impacts of the cartel could persist beyond the expiration date of the authorised conduct". We had hoped to gain insights from the paper that Dr Pleatsikas cites to this effect, however this paper has *no relevance whatsoever* to the current case.

151. In short, the paper concerns incentives that cartel members may have to keep prices high after a cartel ends in order to mitigate the quantum of litigation damages.[150] There is no sense in which this relates at all to the conduct that is the subject of the current authorisation application. The proposed conduct is not aimed at fixing prices for the supply of mobile wallet products to consumers (or any other prices) above a competitive level. On the contrary, the conduct is directed at ensuring that consumers benefit from increased competition between mobile wallet providers. Moreover, the applicants will not find themselves in a litigation context at the end of the authorisation period in relation to the conduct that was authorised, and will not be concerned with damages mitigation.

152. It therefore remains entirely unclear in what sense Dr Pleatsikas considers that inefficient impacts of collective negotiation (if there were any) would extend beyond the expiry of the authorisation period. On the contrary, our expectation is that the collective negotiation (and collective boycott) will deliver significant net *beneficial effects* beyond the authorisation period by enhancing competition in mobile wallets.

149 Application for Authorisation, Submission by Gilbert + Tobin, 25 July 2016, p. 4.

150 See Harrington Jr, J.E. (2004) "Post-Cartel Pricing during Litigation", *The Journal of Industrial Economics*, vol. LII, no. 4, pp. 517 – 533. This paper concerns the extent to which members of a cartel may have a strategic incentive to maintain prices above the "non-collusive" price following the end of a cartel *so as to mitigate the quantum of damages payable following litigation over the price-fixing conduct*. Harrington observes that by maintaining prices above a "non-collusive" price following the end of the cartel, the cartel members can increase the "but-for" price used in the calculation of damages, thereby placing downward pressure on the estimate of any damages they may be required to pay. This issue is irrelevant to a consideration of the proposed conduct that is the subject of the application for authorisation.

APPENDIX A – BARRIERS TO SWITCHING ISSUERS

153. Since 2008 there have been a number of inquiries in relation to the retail banking sector that have considered barriers to switching and consumers' propensity to switch in relation to both transaction accounts (which is a prerequisite for use of a debit card) and credit cards. The results of industry consultation in the context of these inquiries suggest that consumers are not "sticky" in relation to either debit or credit accounts and that iOS users would not face any significant impediments to obtaining either a debit or credit card from an alternative issuer if the issuers of their existing cards did not offer the ability to use Apple Pay.

Debit Cards

154. As part of a package of measures for *A Competitive and Sustainable Banking System*, which was announced on 12 December 2010, the Government explored options to assist customers to switch banking service providers more easily.[151] Following consultation with representatives of financial institutions, regulatory bodies and other interested organisations, the Government noted that, despite the fact that there are likely to be at least some barriers to switching,[152] transaction accounts are an area of considerable switching activity.[153] The Commonwealth Bank had previously reported that it "opens and closes

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151 Australian Government, Banking Services Switching Arrangements, Banking services: cost-effective switching arrangements, 4 July 2011, paragraph 1.1, p. 1.

152 The Government noted that part of the barrier to switching was the lack of any clear financial incentive to offset the effort required to switch (Australian Government, Banking Services Switching Arrangements, Banking services: cost-effective switching arrangements, 4 July 2011, paragraph 1.14 – 1.15, pp. 3 – 4):

> *In general, net balances in these [transaction] accounts attract minimal or zero interest but on-going administration fees also tend to be quite low. Offers of lower fees and charges are always welcome but compared with the often substantial gains to be had from switching home loans or term deposits the potential gains from switching transaction accounts would not loom nearly as large for most customers. This suggests a lesser financial incentive for customers to shop around for better deals in transaction accounts per se […]*
>
> *Motivations aside, switching transaction accounts is somewhat more demanding than switching mortgages or deposit accounts. Additional identity checks are likely to be required, and for many customers there will be a number of direct debits and credits to be transferred. The perceived hassles involved in these processes by prospective switchers are usually greater than the problems experienced by people actually making switches. Nonetheless, such perceptions, combined with the absence of clear financial incentives to offset the effort required, would suggest a certain amount of inertia when it comes to switching transaction accounts. Why bother if the hassle of switching is likely to outweigh the potential benefits? And if the transaction accounts on offer from different institutions are broadly the same anyway, why change?*

The implication of this is that low switching rates for transaction accounts would not necessarily mean low switching of transactions accounts if there were some clear incentive to switch, such as in order to be able to use an integrated mobile wallet. ANZ's decision to join Apple Pay before other issuers is expected to offer customers of other issuers incentives to switch their transaction (and/or credit) accounts to ANZ. In this regard, see the statement of ANZ chief executive Shayne Elliott in note 61 above.

153 In the context of the consultation, APCA and Choice provided separate estimates to the Senate Committee inquiry that pointed to switching rates of around 8-10 per cent of transaction accounts per annum. The Government noted that:

over a million personal transaction accounts a year in the context of having over 5 million personal transaction accounts."[154] Other banks and the Australian Payments and Clearing Association (APCA) also indicated in the context of an earlier inquiry that they considered "there is substantial switching and effective competition in transactional banking services."[155]

155. Further, the Government noted that access to the most convenient points of contact for conducting their banking was likely to be a relevant factor in consumers' decision to switch transaction accounts:

> *It is probably also the case that non-financial considerations, such as access to the most convenient points of contact (physical or electronic) for conducting their banking, and dissatisfaction with the service provided by their existing provider, weigh more heavily in the decisions of customers moving transaction accounts than they do for mortgage and deposit accounts.*[156]

156. This information suggests that those iOS users that consider Apple Pay to be more convenient than other forms of payment would not face significant barriers to switching their transaction account (or simply opening a new one with another bank), if they could not use the debit card issued by their existing financial institution to make payments via Apple Pay. Further, it suggests that the convenience of Apple Pay may itself be a sufficient incentive for consumers to switch transaction accounts.

Credit Cards

157. Last year the Senate Economics Reference Committee considered barriers to switching as they pertain to credit cards in the context of its inquiry into interest rates and informed choice in the Australian credit card market.[157] A number of interested parties to that inquiry submitted that there was a relatively high rate of switching of credit cards in Australia.[158] In particular, ANZ noted that "credit cards are the most switched product in Australian banking", with close to one million customers changing or adding a new credit card each

> *These numbers of 8-10 per cent, which are comparable with estimates of switching rates in some European countries with more formal switching mechanisms, raise again the threshold question of the seriousness of current impediments to switching transaction accounts. Clearly, those impediments should not be exaggerated.*

Australian Government, *Banking Services Switching Arrangements, Banking services: cost-effective switching arrangements*, 4 July 2011, paragraph 1.16 – 1.17, p. 4.

154 Australian Government, *Banking Services Switching Arrangements, Banking services: cost-effective switching arrangements*, 4 July 2011, paragraph 1.16, p. 4.

155 Australian Government, *Banking Services Switching Arrangements, Banking services: cost-effective switching arrangements*, 4 July 2011, paragraph 1.16, p. 4.

156 Australian Government, *Banking Services Switching Arrangements, Banking services: cost-effective switching arrangements*, 4 July 2011, paragraph 1.14, p. 4

157 Senate Economics Reference Committee, *Inquiry into interest rates and informed choice in the Australian credit card market*, December 2015, Chapter 4, pp. 35 – 54.

158 Other parties, including Choice, presented the results of their own surveys that suggested that the rate of switching was lower than the banks were suggesting.

year (approximately 8 per cent of all credit card customers).[159] Westpac also cited an Argus 2014 Benchmarking Study, which estimated that:

> *…approximately 1.4 million to 1.5 million new Credit Card accounts are opened each year in Australia. This represents around 9% of the 15.7 million accounts currently in the market. Given net account growth is approximately 2% this demonstrates a churn rate of 7% per annum. This data provides strong evidence that consumers are willing to shop around and that switching Credit Card type and providers is relatively easy.*[160]

158. The inquiry did not identify any significant barriers to switching in terms of the ability of consumers to obtain a new credit card.[161] Indeed, Treasury submitted that there "are minimal barriers to consumers obtaining a new credit card or switching to a different provider, apart from credit assessments and upfront fees".[162] CANSTAR also stated that it "has never been easier to find yourself a second credit card, or a third or a fifth. It is simplicity itself".[163]

159. CHOICE submitted survey evidence that suggests that, although a not insignificant proportion of consumers have a desire to keep all of their accounts with the one bank, this was not the most important feature to them when choosing a credit card.[164] When asked to rank credit card features that were most important to them, 62% of respondents said that "low fees" was the most or second-most important feature of a credit card, while 51% said that "low interest rate" was the most or second-most important feature. By contrast, only 17% of respondents said that having a card from a bank they have other accounts with was the most or second-most important feature of a card.[165]

160. The above survey data suggests that, although consumers may find it convenient to have all of their accounts with one financial institution, this is not a factor that would prevent them

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159 ANZ, Submission 27, pp. 6–7.

160 Westpac, Submission 21, p. 5.

161 The primary barriers to switching identified were the process that consumers are required to go through with their bank when they want to cancel a credit card and the time and effort required to switch over any automatic payments. Senate Economics Reference Committee, *Inquiry into interest rates and informed choice in the Australian credit card market*, December 2015, Chapter 4, paragraphs 4.46 – 4.53, pp. 46 – 48.

162 Treasury, Submission 17, p. 4.

163 Mr Stephen Henry Mickenbecker, Group Executive, Ratings and Financial Services, CANSTAR Pty Ltd, Proof Committee Hansard, 22 September 2015, p. 34. CANSTAR also questioned the barrier to switching imposed by the need for consumers to switch over all automatic payments, noting:

> *I am not sure that that is actually the barrier, though. I am not sure that there is a genuine barrier because, in many, many cases, it is not a case of surrendering or cutting up the old credit card; one has a reasonable period of time to observe those transactions and to then make the changes. So I do not think that those barriers are genuine barriers to switching.*

164 CHOICE commissioned research into consumer understanding and use of credit cards. Survey evidence showed that 26% of people chose the credit card they use the most because it was provided by a bank they have another account with, and that 26% of respondents that had switched cards had switched because they had opened another account with a new bank and wanted to keep all accounts together. CHOICE, Submission 10, CHOICE: Cutting Credit Card Confusion, pp. 14 – 16.

165 CHOICE, Submission 10, CHOICE: Cutting Credit Card Confusion, p. 14.

from applying for a credit card from another issuer if presented with a sufficient incentive, be it the offer of lower fees, a lower interest rate or the ability to use Apple Pay. The offer of credit cards from issuers such as American Express and Latitude (formerly GE Money), that do not offer any other significant banking services (outside of personal loans), also demonstrates that consumers are willing to open a credit account with a provider other than their primary financial institution.

161. If mobile wallets are the "paradigm shift" that Dr Pleatsikas, Apple and industry players assert,[166] then it is reasonable to expect that iOS users will seek to open debit or credit accounts with those issuers that participate in Apple Pay if the issuer of their existing cards does not. Indeed, ANZ chief executive Shayne Elliott recently advised during an interim results call that since ANZ announced that it would offer Apple Pay:

    a. attempts to apply for a new credit card online had increased by 20 percent; and

    b. the number of online deposit applications on the same day as the announcement were the highest on record, more than double the daily average, and "that higher level is continuing".[167]

162. On this evidence, any switching costs associated with the opening of a new account have not been sufficient to inhibit a significant degree of consumer switching in relation to both debit and credit accounts. Given that, in order to access Apple Pay, iOS users would not need to give up their existing cards and accounts (rather, they would simply need to open a new debit account or apply for a new credit card), they likely face relatively low costs in doing so (for example, they would not necessarily need to incur the time cost associated with re-directing their income and altering all automatic payments).

163. This reinforces the analysis in Section 4 of the first CRA report that in the counterfactual there will likely be significant substitution of payment cards from issuers that cannot offer integrated mobile payments on iOS devices to those that can, and consequently, significant pressure on the applicant issuers to reach agreements with Apple (as otherwise they will lose significant business to rivals).

166 See above note 71.

167 James Eyers, "Apple Pay-led surge in ANZ card customers drives rival banks to renegotiate," *Sydney Morning Herald*, 10 May 2016 at http://www.smh.com.au/business/banking-and-finance/apple-payled-surge-in-anz-card-customers-drives-rival-banks-to-renegotiate-20160509-goppf0.html.

WHITE PAPER – APPLE PAY IN AUSTRALIA

PUBLIC REGISTER VERSION

PREPARED AT THE REQUEST OF COUNSEL

I. ASSIGNMENT

1. I have been told that a number of Australian credit and debit card issuers (the applicants) are seeking authorization to collectively negotiate with Apple in relation to three issues:

a. Exclusivity: the ability to access or use the iPhone's NFC functionality to provide integrated NFC capable mobile wallets that can make NFC payments (alongside and in competition with Apple Pay), as is possible on the Android platform;

b. Security: ensuring that all parties to the collective negotiation can rely on Apple Pay at least meeting the same security standards that apply to Australian credit card issuers (in relation to card payments and their own mobile wallets); and

c. Pass-through of fees: the ability of the applicants to make independent decisions as to whether to charge for the additional costs of offering Apple Pay.

2. I also understand that as part of the authorized conduct, participants are free to individually negotiate with Apple at any time in relation to all issues other than the three issues above, but will not offer Apple Pay to consumers until collective negotiations on the three issues above are complete.

3. I have been asked to prepare an independent expert economic report considering the bargaining power of Apple in relation to Apple Pay negotiations with card issuers and whether the intervention of allowing the applicants to engage in the collective negotiation and boycott (specifically in relation to exclusivity and the pass-through of fees) is likely to result in enhanced Australian consumer and producer welfare compared to a scenario where Apple negotiates with each bank individually.

II. SUMMARY OF KEY FINDINGS

a. Even though Apple competes for users of smartphones, it has market power in respect of applications and services for iPhone users. The "competitive bottleneck" occurs because the only way for service providers to access iPhone users is through Apple's platform. The market power held by Apple translates into highly asymmetric bargaining power for Apple when negotiating individually with card providers.

b. Apple's bargaining power is evidenced by its ability to propose terms which include a prohibition on accessing the iPhone's NFC functionality for mobile payments through applications other than Apple Pay (exclusivity); security standards dictated by Apple (security); and the imposition of a percentage fee paid to Apple on each Apple Pay

transaction, together with a prohibition on passing any amount of that fee onto Apple Pay users (pass-through of fees).

c. In contrast, if card issuers can collectively bargain and boycott in relation to Apple Pay, the value created by card issuers as a group will be reflected in negotiations. This increases the probability of successfully negotiating to eliminate or improve the restrictive terms and conditions surrounding exclusivity, security, and transparency of fees. Modifying or eliminating Apple's restrictive conditions will promote competition, transparency, and innovation in mobile payments, which in turn increase adoption and producer and consumer surplus in Australia.

d. There are less restrictive ways in which Apple can achieve a seamless and secure mobile payment system for iPhone users than requiring that all mobile payments on the iPhone go through Apple Pay (with its associated fees); these alternatives would in fact be expected to make payments more seamless and secure for many customers, and further would be expected to expand the utilization of mobile payments while increasing both consumer and producer surplus in Australia.

e. Mobile payment innovation and adoption will be limited by Apple's action, across all smartphone users, including Android users.

III. QUALIFICATIONS

4. My name is Susan Athey, and I am the Economics of Technology Professor at Stanford Graduate School of Business, where I also co-direct the Digital Business: Data, Decisions & Platform Strategy Initiative. I received a B.A. in Economics, Computer Science and Mathematics from Duke University in 1991, and a Ph.D. in Economics from Stanford University in 1995. I joined the faculty of Stanford Graduate School of Business in 2013 to teach and conduct research in the areas of platform markets and the economics of the internet and digital markets. Prior to Stanford, I also held professorships for Economics at Harvard University (2006-2012), Stanford University (2001-2006) and Massachusetts Institute of Technology (1995-2001).

5. At Stanford, I have undertaken a variety of teaching assignments and research related to platforms, the economics of internet and digital markets, as well as general product development strategies. I have taught various courses including *Platform Competition in Digital Markets* and *Topics in Digital Businesses,* which involve analyzing the economics of digital platform markets and developing an understanding of platform concepts in the context of internet and technology platforms in multiple industries including finance. More

generally, I have taught courses on financial technology, internet search and the impact of big data on business. I have authored or co-authored in various publications on similar issues such as "The Impact of the Internet on Advertising Markets for News Media," "The Impact of Targeting Technology on Advertising Markets and Media Competition" and "Position Auctions with Consumer Search" where I study the economics of advertising platforms.

6. My research on platform issues extends beyond my work at Stanford, Harvard and MIT. I am a Research Associate and co-organizer of the annual conference on Productivity and Information Technology at the National Bureau of Economics Research ("NBER"). Until 2014, I was a founding co-director of the NBER Market Design Working Group, which brings together scholars who study the design of marketplaces, platforms, auctions, and matching algorithms.

7. In addition to teaching and research, I have advised various organizations and enterprises that employ platforms and platform strategy as part of their business. For example, I served as a high level advisor to executives at Microsoft, where I worked as a consultant and consulting chief economist for several years. In that capacity, I directly analyzed the economics of platform offerings. I have also advised venture capital firms, including NYCA Partners and XSeed Capital, who consider investments in a wide range of platform businesses.

8. I have also been a member of the President's Committee for the National Medal of Science since 2011, as well as an elected member of the executive committee of the American Economic Association, the Council of the Econometric Society, the National Academy of Sciences, the American Academy of Arts and Sciences and the Econometric Society. I am also a corresponding fellow of the British Academy of Science.

9. My curriculum vitae is attached to this report as Appendix A.

IV. CASE BACKGROUND

10. The following background is relevant to the arguments presented in this paper and explains:

a. The current state of contactless payment technology in Australia.

b. The resulting key role that access to NFC capability in smartphones will play in the success of mobile payments in Australia.

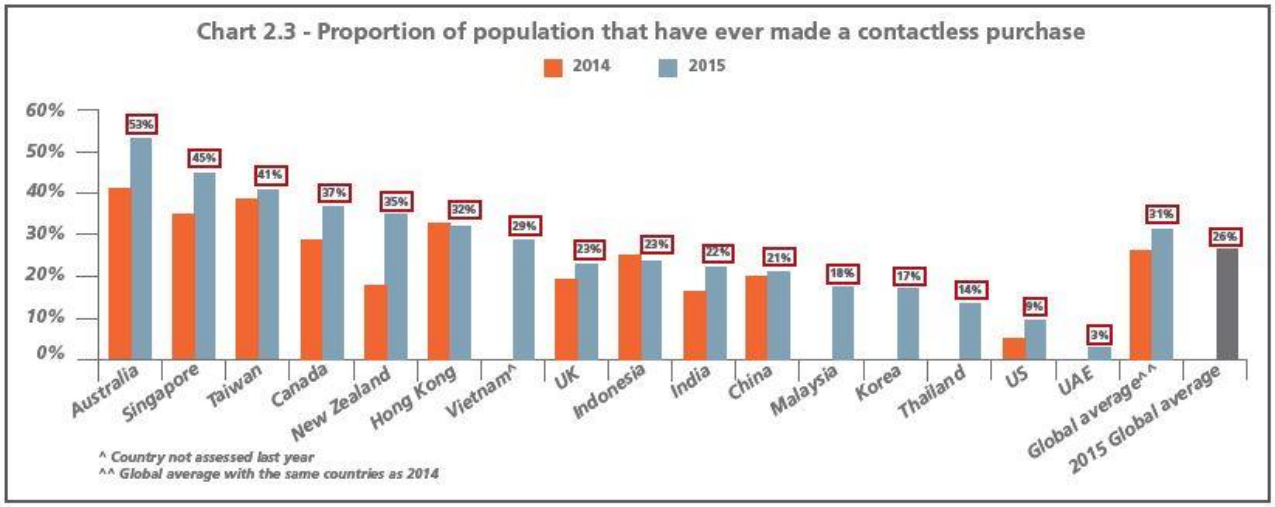
c. A short summary of smartphone ownership in Australia.

d. The key benefits of NFC-enabled mobile payments to the Australian economy.

A. Growth in contactless card payments in Australia

11. Contactless payment technology has been widely adopted by both consumers and merchants, mostly in the form of tap-and-go card payments, with mobile contactless payments recently introduced. Australia has seen extensive investment in NFC contactless point of sale terminals and consumer education by both banks and merchants. Consumers make high rates of contactless card payments, but have yet to widely adopt contactless mobile payments.

12. The number of NFC-enabled contactless terminals in Australia has grown from 60,000 in 2011 to more than 780,000 in Q2 2016.[1] An international survey in 2015 found that Australia led the world in terms of contactless payment usage, with 53% of Australians having made a contactless payment.[2] By contrast, only 9% of US respondents had used a contactless card to make a payment.[3]



Source: RFI Global Payments Evaluation Study 2015[4]

13. NFC technology has been embraced by Australian consumers, with MasterCard reporting that 74% of MasterCard in-store transactions were contactless by March 2016.[5] Most (89%) of these transactions are for less than $100.[6] Transactions using NFC technology are preferred over cash by two-thirds of respondents to a MasterCard survey in 2015.[7] The reasons for this preference included the faster speed of a contactless payment and protection in the event a wallet is stolen.[8]

[1] http://newsroom.mastercard.com/asia-pacific/2016/07/14/android-pay-to-launch-in-australia-with-mastercard/
[2] http://www.nfcworld.com/2015/05/13/335191/australia-leads-the-way-for-contactless-ownership-and-usage/
[3] http://www.bpaybanter.com.au/news-views/why-do-australians-lead-the-way-in-contactless-pay
[4] http://www.nfcworld.com/2015/05/13/335191/australia-leads-the-way-for-contactless-ownership-and-usage/
[5] http://www.canberra.edu.au/cis/storage/Contactless%20payments.pdf
[6] http://www.canberra.edu.au/cis/storage/Contactless%20payments.pdf
[7] http://www.zdnet.com/article/almost-two-thirds-of-australians-prefer-nfc-to-cash-mastercard/
[8] http://www.zdnet.com/article/almost-two-thirds-of-australians-prefer-nfc-to-cash-mastercard/

14. The widespread availability of NFC technology combined with extensive consumer education have enabled Australian consumers to become familiar with and develop a preference for making contactless payments. According to a survey in 2015, 60% of contactless card users in Australia use their card at least once per week.

B. The benefits of mobile contactless payments to the Australian economy

15. In Australia, there has already been migration in payments away from cash to contactless card payments. Contactless payments provide significant benefits to consumers and merchants, such as improved security, reduced transaction time and increased transaction volume. Adoption of mobile payments can lead to further expansion of the benefits of contactless card payments. It is expected that mobile payments will be an even more efficient or convenient payment method for consumers with value-added functionality.

16. Mobile payment applications can integrate other consumer benefits, for example consumer loyalty programs. For example, in the US Walgreens has become one of the first retailers to integrate its loyalty program Walgreens Balance Rewards into Apple Pay and Android Pay.[9] Consumers can apply their Walgreens Balance Rewards information and make a mobile payment within Apple Pay or Android Pay, without needing to scan a card at payment or open a separate app.[10,11] If Walgreens had access to NFC functionality in smartphones, the integration could be improved by adding payment capability to merchant apps.

17. Mobile payments offer increased security by reducing the incidence of fraud. Mobile payments (including Apple Pay, Android Pay, NAB Pay and the NFC sticker solution provided by Commonwealth Bank of Australia) use tokenization, which masks the card number during a transaction. This effectively eliminates the possibility that card details will be stolen during a transaction. The consumer's card information is not transmitted to the retailer, instead it is converted into representative information. The merchant does not receive and cannot store the consumer's card details. This security benefit has the potential to reduce losses from credit card fraud.

[9] http://news.walgreens.com/press-releases/general-news/walgreens-first-to-launch-loyalty-program-integration-with-apple-pay.htm
[10] https://techcrunch.com/2015/11/05/walgreens-becomes-first-retailer-to-integrate-its-loyalty-program-with-apple-pay/
[11] https://9to5google.com/2016/08/22/android-pay-walgreens-balance-loyalty-program/

C. Smartphone usage in Australia

18. Australia has embraced smartphone usage. There are about 15 million smartphones in Australia, with 80% of the population owning at least one[12], and 31 million active mobile phone accounts. Australian users upgrade their smartphone every 2-3 years on average,[13] and 34% of Australians are expected to change their device in the next year.[14] Australian bank customers have adapted to using banking apps to perform banking tasks; around 55% of Australians have used banking apps on their smartphones,[15] with between **[CONFIDENTIAL – RESTRICTION OF PUBLICATION CLAIMED]** of the applicant banks' customers using their mobile phones for internet banking.[16]

D. Mobile payments in Australia

19. The levels of mobile payments in Australia thus far reflect the very recent and limited introduction of mobile payment applications. Apple Pay was introduced late 2015, Samsung Pay in June 2016 and Android Pay in July 2016.[17] For the applicants' mobile payment applications, **[CONFIDENTIAL – RESTRICTION OF PUBLICATION CLAIMED]** use the Westpac NFC payment application that is integrated with the general mobile banking application on Samsung phones, **[CONFIDENTIAL – RESTRICTION OF PUBLICATION CLAIMED]** customers have used NAB's Flik payment application in the last 24 months and **[CONFIDENTIAL – RESTRICTION OF PUBLICATION CLAIMED]** use NAB's Android NFC-enabled payment application.[18] Further opportunity to use a smartphone to make payments will allow consumers to make the switch from contactless card to mobile payment. Competition is an important tool to spur innovation and value creation for mobile payments, further covered in Section VIII of this report.

20. Integrating NFC-enabled payments within banking apps produces a seamless customer experience. Merchant applications can incorporate loyalty programs and location-targeted advertising. Customer behavior when using the application gives providers greater understanding of customer preferences and shopping patterns.

[12] http://landing.deloitte.com.au/rs/761-IBL-328/images/deloitte-au-tmt-mobile-consumer-survey-2015-291015.pdf
[13] http://blog.snakkmedia.com/australian-smartphone-market-share/
[14] http://landing.deloitte.com.au/rs/761-IBL-328/images/deloitte-au-tmt-mobile-consumer-survey-2015-291015.pdf
[15] Deloitte mobile consumer survey 2014
[16] RFi ADBP March 2015, from banks' confidential application
[17] http://www.gizmodo.com.au/2016/07/android-pay-now-available-in-australia/
[18] RFi ADBP March 2015, from banks' confidential application

E. Mobile payment technology alternatives to NFC technology

21. Alternative technologies to handset-embedded NFC-functionality for mobile payments, such as NFC stickers, QR codes and Bluetooth technology, do not offer the same value for competitors and consumers in the Australian context for the following reasons:

a. NFC-enabled point of sale terminals are widely installed and used across Australia, as described above.

b. Consumers have become familiar and comfortable with NFC-enabled payments through use of contactless cards, with high adoption rates in Australia.

c. NFC-enabled stickers incur the costs of producing and shipping the sticker as well as the hassle for consumers of applying it, and, most importantly from a consumer experience perspective, the stickers are not as seamless as using a smartphone's inbuilt NFC antenna and chip. One drawback of a sticker is that there is no direct communication between the NFC sticker and the mobile wallet or mobile payments application – integration between the sticker and the application is limited to enabling or disabling payments.

d. QR codes have been available to consumers for several years. Although popular in other countries such as China, adoption of mobile payment using QR code technology has not been widespread in Australia due to Australia's NFC infrastructure and merchant and consumer acceptance of NFC as a payment method. Increased adoption of such technology would require: a native QR-scanning application on most phones; investment to enable greater point of sale acceptance (while there is widespread merchant ability to accept NFC based payments in Australia, the same is not true of QR based payments and investment /upgrades to the point of sale terminals would be required to achieve this); consumer convenience and functionality above that already available to consumers using NFC card "tap and go". To use a QR code to make a payment a user must unlock their smartphone, open a specific QR Code reader application, scan the QR code and typically enter a passcode before receiving confirmation of payment. A 2015 Federal Reserve survey found for US consumers that the number of consumers making a mobile payment with a QR code had fallen by 39% compared to the previous year.[19]

[19] http://www.federalreserve.gov/econresdata/consumers-and-mobile-financial-services-report-201503.pdf

e. Bluetooth and other communication methods for payment require new hardware to be installed at merchants, which is not a competitive alternative given the existing extensive build-out of NFC terminals across Australia.

f. As an example of the challenges involved in creating a successful mobile payment application without NFC functionality, Swiss banks are facing significant challenges in establishing a competitor application to Apple Pay. UBS, Credit Suisse, Zuercher Kantonalbank, Postfinance and Raiffesisen (leading Swiss banks) have joined with large retailers Coop and Migros, major telecom operator Swisscom and the stock exchange operator SIX telecoms to offer Twint, a mobile payment application.[20] Twint uses beacon technology which operates through the Bluetooth function of smartphones.[21] Apple blocked the application from accessing the iPhone NFC functionality, forcing the application to rely upon a parallel infrastructure which is not built out to the same level as NFC terminals.[22] The Bluetooth technology on which Twint relies is not yet widely available in stores,[23] representing a significant competitive hurdle for Twint. Swisscom has already abandoned one mobile payment application, Tapit, because of the difficulties faced in building a successful application without access to NFC functionality.[24]

22. As a result, I focus on competition in mobile payment applications using the NFC technology embedded in mobile handsets for the purposes of this report, as competition and choice between these applications across platforms is required to facilitate the adoption of mobile payments in Australia and fully realize the benefits and efficiencies from greater mobile wallet adoption.

V. ECONOMIC FRAMEWORK FOR NEGOTIATIONS

23. This section provides an overview of the economic issues involved in understanding the impact of collective negotiations (and the associated boycott) in relation to Apple Pay. We begin by outlining what economic theory has called the "competitive bottleneck" that Apple holds, whereby Apple competes to attract a large group of consumers, and then exercises market power over firms that wish to do business with those consumers. We argue that the market power Apple holds over application developers in general is greater when there are substitutes for an application; even if a category of applications as a whole is very important to Apple's consumers, the presence of substitutes implies that no single application developer has

[20] http://www.finews.com/news/english-news/24397-ubs-apple-electronic-payment-systems
[21] https://www.twint.ch/en/support/faq/#why-is-beacon-technology-used-rather-than-nfc
[22] http://www.finews.com/news/english-news/23608-apple-pay-arrival-unseats-swiss-competition
[23] http://www.finews.com/news/english-news/23608-apple-pay-arrival-unseats-swiss-competition
[24] http://www.finews.com/news/english-news/23920-graubuendner-kantonalbank-apple-pay-twint

significant bargaining power with Apple. In contrast, if developers could collectively bargain and boycott, they could receive a much greater share of the value they bring (collectively) to the Apple ecosystem, increasing their incentives to enter and innovate. We then apply this logic to the case of Apple Pay's restrictions on access to the iPhone's NFC functionality, where consumers can switch or apply for cards from issuers offering Apple Pay but are unlikely to switch mobile operating systems, and Apple Pay is exclusively available on the iPhone and provides a substitute to any potential iPhone mobile wallet application that could be developed. The implication is that in the absence of collective bargaining (and the associated boycott), the issuers have minimal bargaining power, but collective bargaining (and the associated boycott) leads to substantial improvements and allows the issuers to negotiate in proportion to the value they collectively bring.

24. We also highlight the logical fallacies inherent in statements such as: "Apple and Google compete, therefore we expect efficient outcomes for the applications market." Apple and Google compete aggressively for users, precisely because they expect to be able to profit by charging high prices for application developers to access their users (as well as from selling their own services to consumers).

25. Finally, we provide a variety of facts supporting the framework and its application to Apple Pay.

A. Apple's business model

26. The Apple iOS application store (referred to as the Apple App Store hereafter) provides a platform for matching buyers and sellers of applications on Apple mobile devices, including the iPhone and the iPad. Applications on Apple mobile devices are programs that run on iOS, the operating system for the iPhone. Apple controls access to consumers: applications must go through the Apple App Store. Apple does not allow competing application stores to sell applications for Apple mobile devices. Apple also places a variety of restrictions on applications in order for them to be sold in the Apple App Store. Although companies can in principle offer services to consumers through the internet web browser, this typically results in a variety of degradations to performance and functionality, so that even though many e-commerce companies have websites available, they invest substantial resources in applications.

27. The Apple App Store is an increasingly important element of Apple's business model. Apple Internet Services, which includes the App Store, generated $10.2 billion in net sales in 2014 and grew at a rate of 29% between 2014 and 2015.[25]

[25] Apple's 2015 10-K

B. The economics of iOS and the Apple App Store

28. The value of the iPhone to consumers depends on the portfolio of applications and services that they use on the iPhone. Overall, these applications provide substantial value to consumers, but that value is shared across a large number of functions and applications (including voice conversations, messaging applications, email and calendar applications, music and video consumption, games, utilities, and many others). Application developers have been induced to develop applications with the expectation that they will not be subject to discrimination, for example, based on whether they compete with Apple in specific products.

29. For most individual applications, the impact on iPhone market share of having the individual application available on the iPhone is minimal (below, we provide a number of facts supporting this); but if the application is not on available on the iPhone, application developers cannot reach iPhone consumers because the distribution of applications to iPhone users occurs solely through the Apple App Store.

30. This type of situation is referred to in the economics literature on two-sided markets as a "competitive bottleneck," and it arises when the consumer side of the market "single-homes" (that is, consumers participate in only one platform at a time, such as holding only one iPhone), and the other side "multi-homes" (that is, develops applications for both platforms). The prediction of the theory in this case is that the platform competes aggressively to attract consumers (e.g. through research and development, hardware development, operating system design), and then charges monopoly prices to sellers of applications for access to those consumers.[26]

31. The theory makes it clear that we expect Apple's iPhone to compete for consumers as a platform, for example investing in research and development; but simultaneously, the theory predicts that Apple should exercise monopoly power over application developers by requiring developers to pay for access to those consumers. The developers' "outside option" of not developing for a platform is simply to give up their consumers. Below, we provide a variety of evidence in support of this market power. The mobile platforms are able to exercise market power, because the only way for developers to access their consumers is through the platform.

32. We can contrast the real-world scenario, which exhibits this competitive bottleneck, to a hypothetical benchmark where Apple would have less market power over the application developers. It is useful to consider this hypothetical competitive benchmark in detail, in order to emphasize the logical fallacy that is inherent in simplistic statements such as "Apple and Google compete, therefore we expect efficient outcomes

[26] Armstrong, Mark. "Competition in two-sided markets." *The RAND Journal of Economics* 37.3 (2006): 668-691.

for the applications market." In multi-sided markets, it is crucial to be clear what side of the market is being discussed. It is common to have scenarios where one side of the market is competitive, and the other is not.

33. Consider characteristics of a hypothetical world ("competitive benchmark") where an individual application developer would have more market power: (i) switching costs are low, (ii) consumers can switch immediately between platforms if one offers better value, (iii) other than the availability of the application under consideration, platforms are identical in the eyes of consumers, and (iv) an application provides unique (highly differentiated) and important value to consumers. In this hypothetical world, an application developer would be able to access consumers through Android only. In this hypothetical world, the application developer would choose to offer its application on Android only, not on iPhone. Then, all potential consumers of the application would immediately trade in their iPhones for Android phones, thus allowing the application developer to reach them. In such a scenario, the application would hold substantial bargaining power.

34. A substantial failure of any of the four conditions of the competitive benchmark would be sufficient to give Apple market power (or in a negotiation, to hold the vast majority of the bargaining power) over application developers and service providers (such as the applicant card issuers).

35. Obviously, the real-world situation for application developers is much different than this hypothetical world. Applied to the case of Apple Pay, in contrast to the competitive benchmark, if an individual bank refuses to agree to Apple's terms and participate in Apple Pay, this decision is unlikely to induce consumers to immediately switch from iPhones to Android (in order to access an NFC-enabled mobile wallet). Indeed, the applicant card issuers have to date not offered their cards through Apple Pay in Australia, and consumers have not left iPhone in large numbers over the last few months (rather, there is evidence of customers switching or signing up with issuers that offer Apple Pay i.e., ANZ Bank).

36. I now proceed to explore the ways in which the real world departs from the hypothetical competitive benchmark in more detail, and I explain the implications of these departures. First, in contrast to the competitive benchmark, in reality if an application developer chooses not to sell through the Apple App Store (or is unable to offer a relevant product – in this case an integrated NFC enabled mobile wallet), it recognizes that it will simply lose access to those consumers, rather than (as in the benchmark) induce the consumers to follow the application to the Android platform. One important factor in determining the ability of an application to induce consumers to switch to a competing platform is timing. Australian users upgrade their smartphone every 2-3 years on average,[27] and as we discuss below, there are substantial switching costs. This

[27] http://blog.snakkmedia.com/australian-smartphone-market-share/

implies that individual application developers have negligible impact on the market share of iPhones in a relevant time frame.

37. Another key factor determining the ability of an application developer to induce consumers to switch to another platform is the availability of substitutes. The impact of a typical individual application on iPhone market share, while small for almost every application in today's ecosystem, is much lower if there are substitutes or potential substitutes for that application. For applications such as email clients and games, there are substitutes, and so if one application leaves the Apple App Store, consumers can find a close substitute, resulting in negligible impact on the value consumers receive from the platform. Thus, an individual application that faces competition from other, similar applications realizes that if it does not sell its application in the Apple application store, it will not be able to instead reach those consumers through Android. The level of consumer switching from Apple to Android resulting from that application's decision to stay out of the Apple App store is negligible, and thus the application simply loses the ability to serve that part of the market. This is particularly the case in relation to Apple Pay where Apple Pay provides a substitute to any potential iPhone mobile wallet application that could be developed (if access the NFC functionality were allowed) and in Australia where consumers are loyal to their mobile phone brand and contactless "tap and go" payments are already widely available.

38. A key implication of the competitive bottleneck is that application providers face a "prisoner's dilemma" problem. A prisoner's dilemma occurs when each firm individually has the incentive to deviate from behavior that would collectively benefit a group of firms. All of the applicants would benefit if they could collectively resist giving in to Apple in order to collectively negotiate: access to the iPhone's NFC functionality to offer iPhone users alternate integrated mobile wallets (alongside and in competition with Apple Pay); the ability to pass-through the additional costs of Apple Pay; and the application of minimum security standards. (And, as we describe below, this collective negotiation (and the associated boycott) would also benefit Australian consumers and merchants.) However, each applicant individually each has the incentive ("dominant strategy") to accept Apple's terms in relation to exclusivity, security and restriction on pass-through in order to avoid the competitive disadvantage of not being able to offer iPhone users the ability integrated mobile wallet payments through Apple Pay when other issuers can. Competition between the applicants in relation to deposit, credit and debit card account holders means that not giving in to Apple comes at a cost to each individual applicant. ANZ Bank's Apple Pay offering is already increasing the cost of not agreeing with Apple and this cost will increase the longer the applicants hold-out. In comparison, the cost to Apple of not reaching an agreement with an individual applicant is small (the Apple Pay revenue in relation to cards of a particular issuer, as noted above there will be minimal impact on iPhone sales and the platform value which is the key driver of the Apple profit model), while the gain from exclusivity is large.

39. Collective negotiation (and the associated boycott) increases the impact on Apple of not reaching agreement (and the costs of not negotiating in relation to exclusivity, pass-through and security). The absence of most of the major banks from Apple Pay in Australia is a noticeable distinction between the Apple and Android platforms and, as mobile payments increase in popularity, could have an increasing impact on Apple's bottom line. As such, although the bargaining power of the collection of banks is still limited, the decrease in the bargaining power disparity from the collective negotiation and associated boycott increases the chance of negotiating with Apple in a way that is welfare enhancing as set out further below.

40. To summarize, the general economics of the Apple App Store result in a competitive bottleneck situation, whereby Apple has market power over firms who wish to provide services to consumers of the iPhone. In such a scenario, market power can be very different on the consumer side of the market and the firm side; the benchmark economic theory allows for vigorous competition for consumers (by building better iPhones), while being entirely consistent with Apple exercising market power over application developers and other firms who wish to sell to consumers. Apple's market power over service providers is greatest when the services cannot individually affect iPhone market share in the near term. This in turn is more likely to hold when the services are not too important to consumers, and/or when there are substitute services available, a situation that leads individual services providers to have almost no leverage in negotiating with the platform. Collective bargaining (with the associated boycott) solves the prisoner's dilemma problem, and allows the substitute services to share in the benefits created by their category as a whole. Applied to Apple Pay, the competitive bottleneck is in full force: Apple restricts access to its consumers, and consumers in practice do not switch their phones quickly or easily in response to the availability (or lack thereof) of a single card issuer. The availability of multiple card issuers implies that collective negotiation (and boycott) can substantially improve the terms of the agreement, in favor of Australian consumers and producers who would benefit from less restrictive terms and more competition in payment options.

C. The impact of economic fundamentals on bargaining power and negotiation outcomes

41. The economic fundamentals outlined in the previous section provide the most important considerations in determining the outcome of bargaining, as well as the difference between collective bargaining and individual firms bargaining. We have already outlined the "prisoner's dilemma" problem faced by firms, which individually leaves them with negligible bargaining power, even when collectively they provide large value and thus greater leverage in negotiating. In this section, we provide an economic framework for how these fundamentals translate into bargaining outcomes. We also outline secondary factors that can affect bargaining, and relate the discussion to the economics literature on bargaining.

42. To begin, we observe that bargaining is quite complex in practice, and there are many subtle factors that influence its outcome, both in theory and in practice. Nonetheless, the economic fundamentals surrounding the payoffs of players under alternative scenarios are by far the most important factors. The economics literature on bargaining typically consider two outcomes—agreement and disagreement—as well as the surplus (benefits) created by agreeing rather than disagreeing.[28] The theory maps these fundamentals into a division of surplus. In the case of Apple Pay, we can consider disagreement to be the case where card issuers do not participate in Apple Pay and do not gain access to the NFC functionality, while agreement is the case where they do provide payment solutions using the NFC functionality. The division of surplus is determined by the terms of access, with less restrictive terms being more beneficial to the card issuers.

43. Economic theory suggests that the starting point for dividing the surplus is given by the disagreement payoffs. In Apple's case, losing an individual issuer (when others participate in Apple Pay) does not affect the desirability of the iPhone very much. For the card issuer, not participating in Apple Pay when other issuers do results in a loss of those customers' transaction volume. Bargaining theory suggests that the card issuer has to share the gains from serving these iPhone customers with Apple. This translates into Apple being able to dictate terms for NFC access. In contrast, if a large group of issuers negotiates collectively, then the gain to Apple from having the group of issuers participate in payments must be shared with those issuers, which translates into more transparent and competitive terms for NFC access (with corresponding benefits to Australian consumers and producers).

44. Multiple stakeholder bargaining is more complex, but also quite common in practice. In scenarios where individual stakeholders are substitutable and negotiate against a single, large party, coordination among the stakeholders is common. It is particularly common when groups of individuals are collectively valuable, but individually substitutable with one another. The literature highlights these factors in such contexts: "Bargaining power is highest when stakeholders 1) are capable of acting in a unified manner, 2) have access to key information, 3) have a very high replacement cost to the firm, and 4) face low costs if they move to another firm."[29] In the context of the Apple Pay negotiations, the key determinant (and the subject of this submission) is the ability of stakeholders (the applicants) to coordinate in a way that results in terms that are beneficial for competition, transparency, and thus the Australian consumers and producers. A factor that weakens bargaining power in this case is that by "moving to another firm" (that is, only working with Android and abandoning the ability to offer Apple Pay to consumers), the applicants would incur substantial

[28] Baron, Opher, and Oded Berman. "Nash Bargaining with Asymmetric Bargaining Power: Bargaining over Profit in a Simple Supply Chain."
[29] Coff, Russell W. "When competitive advantage doesn't lead to performance: The resource-based view and stakeholder bargaining power." Organization science 10.2 (1999): 119-133.

costs through competitive disadvantage against other issuers that offer Apple Pay, which reduces their bargaining power. The third factor, having high replacement costs to "the firm" (Apple), works strongly against the applicants when they negotiate alone, but in their favor if they negotiate collectively.

45. Another factor in economic models is the level of patience; delaying negotiations imposes a greater cost on those who are less patient, so they settle for a disproportionately small share of the prize. In this case, individual banks may be less patient, since attracting additional customers by agreeing to Apple's fees and terms (while other banks negotiate for better terms) affects their profits materially in the near term (particularly as ANZ bank is already offering Apple Pay), while any costs incurred by Apple by losing market share to Android are uncertain and would only occur in the longer run.

46. Finally, the literature suggests that when parties have significantly unequal bargaining power, it is less likely they will reach a welfare-improving agreement.[30] In the context of Apple Pay, this suggests that collective negotiation (and the associated boycott), by restoring some degree of balance in bargaining, can lead to more efficient outcomes that are better for Australian consumers.

47. Several additional factors affect Apple's bargaining power. Apple has control over a large number of policies, prices, and outcomes that affect card issuers, now and in the future, which lends it additional bargaining power.

48. First, Apple controls access to the iPhone's NFC functionality, and can make future decisions about the terms and conditions for Apple Pay and the Apple App Store that affect the terms on which the banks will be able to offer Apple Pay to their customers and the success and viability of any bank application on the iOS platform. For example, Apple can affect how bank applications are presented or ranked in the App Store, in-application activity pricing, etc.

49. Second, Apple's success is not heavily dependent on Apple Pay or, for that matter, the Australian market. For instance, in 2015, 87% of Apple's global sales were derived from the manufacture and sale of hardware to consumers. Since Apple's business model is not solely dependent on the success of Apple Pay in its current form, it has less to lose in the negotiations compared with Australian banks, giving Apple higher bargaining power.[31]

[30] Choi, Albert, and George Triantis. "The effect of bargaining power on contract design." Virginia Law Review (2012): 1665-1743.
[31] Apple 10K report 2015

50. Finally, given the possibility for consumers to switch their usage across different debit and credit cards and hold multiple cards, losing a single bank's participation in Apple Pay does not harm Apple much, giving Apple most of the bargaining power; but bargaining collectively, banks have sufficient impact to induce Apple to consider allowing banks the ability to pass-through fees and/or providing consumers with competitive integrated mobile wallet alternatives to Apple Pay on the iPhone.

D. Evidence of Apple's market power in mobile applications

1) Apple exerts monopolistic power over the Apple App Store

51. The Apple App Store serves (by Apple policy) as the only way for application developers (including developers of mobile wallets) to reach consumers using Apple devices. Currently the Apple App Store charges developers an annual membership of $99 or $299, depending on membership type. Google Play charges a one-time fee of $25. Both platforms charge about 30% of application revenues to developers,[32] with Apple recently introducing a change that drops the fees to 15% of auto-renewable subscriptions once an application user has been a subscriber to the application for one year.[33] This change was introduced in order to encourage application developers to develop subscription-based applications, increasing Apple's revenues from services.[34]

52. Were the application platform market truly competitive, price competition would have served to erode the fees down from 30%, particularly for popular or important applications. In a competitive benchmark, application developers would be able to threaten to withhold their applications from one platform; and in that competitive benchmark, the application's customers (facing no switching costs and otherwise-equivalent platforms) would switch to the other platform to access the applications. In that benchmark, popular applications would negotiate their fees lower.

53. Spotify is an example of a very popular application which nevertheless experiences restrictions by Apple on iPhones. Spotify premium costs $10 per month, but was increased to $13 per month for iPhone users, while the price did not change for Android users.[35,36] This price increase did not induce users to switch to Android, providing evidence that the conditions of the competitive benchmark described above do not

[32] http://www.techrepublic.com/blog/software-engineer/app-store-fees-percentages-and-payouts-what-developers-need-to-know/
[33] https://developer.apple.com/app-store/subscriptions/
[34] http://www.bloomberg.com/news/articles/2016-07-01/spotify-s-apple-dispute-reveals-uneasy-dependence-on-app-stores
[35] 100 million – 500 million downloads from Google Play.
https://play.google.com/store/apps/details?id=com.spotify.music&hl=en
[36] https://support.spotify.com/us/account_payment_help/managing_payments/why-does-paying-for-spotify-through-itunes-cost-more/

hold: higher prices for the same applications on the iPhone do not induce consumers to switch to Android devices.

54. Spotify is a digital music service. Users can listen to music online and offline, through a browser, desktop and mobile application. Users can choose free or premium membership, with tiered access and features depending on membership level. Spotify has over 100 million monthly active users worldwide, 30 million of whom are paying subscribers[37]. In Australia, Spotify is adding 60,000 users per week and claims that one in four Australians have tried the platform[38]. Spotify shares 70% of its revenues with music producers.[39] If consumers access Spotify through the mobile browser, Apple's 30% fees could be avoided. Spotify has details of how to switch subscription from iOS application to web-based subscription on its website,[40] but, reflecting Apple's strong bargaining power even against a very popular application, Apple has prevented Spotify from providing this link in the Apple App Store Spotify application. Apple recently launched its own music streaming service Apple Music, priced at $10 and undercutting Spotify. As further evidence of Apple's bargaining power over applications, Spotify has claimed that Apple has delayed releasing updates of the iTunes application to iOS users;[41] such an action, if true, would not be possible in a world where consumers switched platforms on the basis of an individual application's performance. Apple is able to enforce high prices as well as restrictive policies, even on a very popular application, because of the low likelihood that users would switch operating systems via switching phones or other devices to access the Android version of Spotify.

55. Apple's relationship with Amazon's online book reader, Kindle, provides further evidence of its market power in the mobile applications industry. Apple competes with Kindle through its own reading application, iBooks. The Kindle application tried to avoid Apple's 30% fee on in-application purchases by directing consumers from the Kindle application to Amazon's website to complete a purchase. However, Apple mandated that Kindle remove the in-application link if it wanted to stay in the Apple App Store, in order to comply with Apple App Store Rules that all in-application purchases are routed through the App Store with the 30% fee included. In 2011, Amazon finally agreed to Apple's terms.[42] Kindle users now have to open the safari browser to make the purchase, then open to their Kindle application to receive the

[37] http://www.theverge.com/2016/6/20/11976554/spotify-has-over-100-million-active-users
[38] http://www.smh.com.au/business/media-and-marketing/spotify-adding-60000-australian-users-per-week-20150528-ghbocg.html
[39] https://www.spotifyartists.com/spotify-explained/#how-we-pay-royalties-overview
[40] https://support.spotify.com/us/account_payment_help/managing_payments/why-does-paying-for-spotify-through-itunes-cost-more/
[41] http://www.bloomberg.com/news/articles/2016-07-01/spotify-s-apple-dispute-reveals-uneasy-dependence-on-app-stores
[42] http://www.computerworld.com/article/2509396/mobile-apps/amazon-caves-to-apple--drops-kindle-s-in-app-button.html

download. The link to the Amazon store is not provided in the application. Even though this results in a much more complex and cumbersome user experience, Apple maintained its policy without fear that consumers would leave their platform. The Amazon Australia website states "*Although you can't shop for Kindle content directly from the Kindle reading app, you can purchase content from the Kindle Store using the Safari browser and, during that process, deliver Kindle titles to the Kindle reading app on your iPad, iPhone, or iPod touch"*, as well as providing step-by-step instructions for purchasing a Kindle book through the browser and downloading to the Kindle iOS application.[43]

2) Immediate switching from iPhone to competing smartphone is not credible

56. The hypothetical competitive benchmark where Apple does not have market power over application developers also requires consumers to be willing to switch from an iPhone to Android in a relatively short time frame, in response to an application not being available on the iPhone. A variety of evidence shows that the real world is quite far from the competitive benchmark, including:

a. Customer loyalty to their mobile phone operating system

b. High costs of switching

c. The availability of individual applications does not drive customer switching

57. First, consumers tend to be loyal to their operating system. In Deloitte's 2015 survey of 2,000 Australian smartphone owners, 61% of current iPhone owners had an iPhone as their previous handset. For Samsung handsets, the number was 47%.[44]Additionally, a Kantar survey in October 2015 found that 74% of Australian iPhone 6 buyers in the preceding three months had owned an iPhone previously. About 8.5% of the iPhone 6 buyers were switching from Android, mainly because of promotions on offer from the network provider.[45]

58. High switching costs also deters consumers seeking to switch from iOS to Android, which strengthens Apple's market power over application developers. The primary switching cost is the price of a new phone. The two most popular smartphone brands in Australia are iPhone and Samsung (which operates an Android operating system). At the top of the price range, the iPhone 6S costs 929 AUD from the Apple store online[46] and the Samsung S7 costs 1,149 AUD from the Samsung store online.[47] The Android operating

[43] https://www.amazon.com.au/gp/help/customer/display.html?nodeId=201244870
[44] http://landing.deloitte.com.au/rs/761-IBL-328/images/deloitte-au-tmt-mobile-consumer-survey-2015-291015.pdf
[45] http://www.afr.com/technology/iphone-6-popularity-hits-samsung-sony-and-android-crowd-sales-in-australia-20151007-gk3vv7
[46] http://www.apple.com/au/shop/buy-iphone/iphone6s

system is also offered on significantly lower-priced phones,, with the average price for an Android handset in the US at $215 in Q1 2016.[48]

59. The hassle of transferring data and accounts across platforms also increases the switching costs, in addition to the familiarity of the consumer with their existing operating system and the manner in which it functions. Google offers an application and online tutorial for transferring from Apple to Android.[49] Apple offers online and in store guidance for transferring from Android to Apple.[50]

60. Some iPhone-specific applications, such as iMessage, require a certain effort to transfer the data to Android.[51] Further, some in-application purchases may not carry over from one platform to another, further dissuading switching. For example, movies, TV shows and ebooks purchased through iTunes cannot legally be copied to an Android device.[52] Apple Pay is a small part of consumers' overall iPhone experience, and if a single bank or credit card were not available on Apple Pay the loss of functionality would be unlikely to cause consumers to switch platforms.

61. Individual application availability is not a credible driving force for consumers to switch mobile operating systems.

62. This is reflected in the fact that developers multi-home across platforms. In particular, most application developers offer their applications on both the Apple's App Store and Android's Google Play. In Australia, of the 100 most downloaded applications from the Apple App Store on September 19, 2016, 86 were also available in the Google Play store. On the same date, out of the 100 most downloaded from Google Play in Australia, 90 were also available on the Apple App Store.[53] CommBank, Westpac and NAB, the banking applications developed so far by the applicant banks, are also multi-homed across the Apple and Android platforms.[54]

63. Developers multi-home to reach consumers, despite significant additional costs. If customers switched easily between platforms driven by a desire to access a specific application, the developer of that

[47] http://www.samsung.com/au/galaxy-s7/buy/
[48] Philip Elmer-DeWitt, "The Apple iOS and Android Price Gap Just Gets Wider," Fortune, February 15, 2016, available at http://fortune.com/2016/02/15/apple-android-asps/.
[49] https://www.android.com/switch/
[50] http://www.apple.com/iphone/switch-to-iphone/
[51] https://ting.com/blog/you-asked-transferring-texts-from-iphone-to-android/
[52] http://www.digitaltrends.com/mobile/how-to-switch-from-iphone-to-android/
[53] Data accessed from App Annie on September 19 2016; equivalent application on other platform found by searching in the online application store
[54] Data access from Apple App Store and Google Pay on September 23 2016

application would offer it on only one platform to reduce development time, complexity and costs. But this does not happen, even for popular applications.

64. There are significant differences between developing an application for iOS and developing an application for the Android OS. There is a much broader range of Android devices on the market, compared to the iOS offering of iPhone and iPad. Android is offered across a range of OED manufacturers including Samsung, HTC, Nexus and Motorola. The range of devices increases the complexity of designing an application that will work on all of them.[55] Additionally, Android users are distributed across at least seven different versions of the Android OS. The version with the largest proportion of users (KitKat, version 4.4) has only 27.7% of Android users in January 2016, indicating the level of fragmentation of OS versions among Android consumers.[56] In contrast, an iOS application needs only to work on iPhone and iPad, and 97% of iOS users were using iOS 9 or iOS8 on Sep 12 2016.[57]

65. These differences translate into longer application development times for Android, on average. Infinum, an independent application development company, compared the amount of time taken to develop the same application for Android and iOS in six of their past projects. Their conclusion was that Android applications take ~30% longer to develop than iPhone applications, leading to a commensurate increase in development costs.[58]

66. The fact that application developers, even developers of very popular applications, publish across platforms, despite the higher cost of doing so, is evidence that consumers rarely switch platforms to gain access to a single application or service.

67. In another departure from the competitive benchmark, the demographics of Android and Apple users are different, supporting the idea that there are factors other than application availability that drive adoption and reduce consumers' propensity to switch platforms.

68. Generally, iPhone users account for the majority of commercial activity and revenue for services delivered through smartphones. In 2015 the average iPhone user spent $35 on applications (download of paid applications, plus in-application purchases).[59] A marketing analytics report in 2016 found that iOS users

[55] https://crew.co/how-to-build-an-online-business/build-ios-app-or-android-app/
[56] https://developer.android.com/about/dashboards/index.html
[57] https://developer.apple.com/support/app-store/
[58] https://infinum.co/the-capsized-eight/articles/android-development-is-30-percent-more-expensive-than-ios
[59] http://fortune.com/2016/03/29/spend-on-iphone-apps/

spend almost 2.5 times more on in-application purchases than Android users, and were also 50% more likely to start spending money on in-application purchases. [60]

69. There are a variety of additional demographic differences between iPhone users and Android users. In Australia, half of iPhone users are aged 18-24, whereas as Samsung users (where Samsung is the largest provider of Android hardware) are more evenly distributed across age groups.[61] Android users are more likely to be lower income.[62] iPhone owners are 41% of all Australian smartphone owners, according to the Deloitte 2015 Mobile Consumer Survey. iPhone users are more likely to have a graduate degree, earn household income above $125,000, hold a professional or managerial job, and agree that they are "addicted" to digital devices, than Android users. [63,64]

3) 'Switching' card providers is easier and more likely to occur than switching mobile operating systems

70. The prevalence of credit card multi-homing suggests consumers can easily switch to a credit card signed on to Apple Pay, or switch more of their usage to such cards. As of June 2015, the average number of credit cards per person in Australia was 2.18.[65] In the 18-35 year old demographic, 18% had two credit cards and 8% had three or more credit cards; amongst 35-54 year olds 27% had two and 21% had three or more; and amongst those over the age of fifty-five, 20% had two and 18% had three or more credit cards.[66] The culture up until this point has been for Australian consumers to remain loyal to their main banking provider: in the three years to March 2015, only 10% of Australians had switched their primary bank account.[67] Despite this, customers may already have access to more than one banking institution: financial research firm RFI found that on average Australian retail banking customers hold 6.2 products with 3.2 institutions, with affluent customers holding an average of 8.9 products (data as of 2013).[68] High multi-homing across financial institutions, or an increasing propensity to have more than one card, is a further increase to Apple's bargaining power and reduction of the bargaining power of individual banks. Consumers may be much more likely to shift their cards towards institutions that support Apple Pay to gain access to Apple Pay, than to switch mobile phone operating system.

[60] http://www.androidauthority.com/new-report-reveals-that-ios-users-spend-2-5-more-on-in-app-purchases-than-android-users-700983/
[61] http://blog.snakkmedia.com/australian-smartphone-market-share/
[62] http://savvyapps.com/blog/android-vs-ios-which-platform-to-build-for-first
[63] http://www.forbes.com/sites/toddhixon/2014/04/10/what-kind-of-person-prefers-an-iphone/#6395b8423e5a
[64] http://savvyapps.com/blog/android-vs-ios-which-platform-to-build-for-first
[65] http://www.creditcardfinder.com.au/credit-card-statistics
[66] http://www.creditcardfinder.com.au/credit-card-statistics
[67] http://www.news.com.au/finance/money/wealth/switching-banks-really-is-not-that-hard/news-story/a4ffac8809107437b53be3643a4adde6
[68] http://www.rfintelligence.com/media/2013-Dec-ABF-Cross-Sell.pdf

71. It is easier for consumers to switch card providers (or move their usage to different card providers) than switch smartphone operating system. There is some anecdotal evidence of customers switching to ANZ Bank cards in order to access Apple Pay in Australia. We note that of the eight consumers who made submissions to the ACCC, five indicated that they had or soon would switch cards in order to sign up to Apple Pay. ANZ Bank estimates that 20% of eligible customers (customers with credit/debit cards and iPhone 6) have signed up to Apple Pay since it joined on 28 April 2016.[69] Data has not been released on the number of customers switching to ANZ Bank's cards in order to access Apple Pay.. It is of note that a credit card is one of the easiest and most common products for a consumer to have outside of their main financial institution, as evidenced by the success of card issuers such as American Express and Latitude (formerly GE Money) that do not offer full banking services in Australia.

4) Banks have expressed the need to bargain collectively in other countries

72. Like Australia, the Canadian banking industry has many players but a few larger players account for the majority of the credit card, debit card, and deposit accounts. The six largest Canadian banks, which account for 88% of assets under management,[70] formed a consortium to negotiate collectively with Apple in relation to Apple Pay. An industry wide taskforce was established before Apple entered the Canadian market to respond to fraud concerns associated with the use of Apple Pay in the United States and to ensure that the banks could influence the authentication and card provisioning processes associated with Apple Pay. Ultimately, the security protocol developed was accepted by Apple and, unlike the model introduced in the US, Canadian banks retain control over the provisioning of a card into Apple Pay through the introduction of mandatory 'secondary authentication' by the banks to verify customer information before a card can be used in Apple Pay. The Canadian banks also managed to agree to pay Apple lower fees than US banks do,[71] reducing the tax on the Canadian payment system, and thus consumer and producer welfare. In China, Apple negotiated with UnionPay, a consortium of Chinese financial institutions, resulting in Union Pay members paying a 0.07% fee per transaction, half of what American banks pay,[72] again increasing welfare in China by reducing the tax on Chinese producers and consumers imposed by Apple.

[69] http://www.afr.com/business/banking-and-finance/anz-apple-pay-users-hit-250000-20160829-gr3p0e
[70] Market share calculated by total assets. Data retrieved from Canadian Office of the Superintendent of Financial Institutions on September 22, 2016
[71] http://www.wsj.com/articles/apple-pay-plans-to-launch-in-canada-this-fall-1429280816; http://business.financialpost.com/news/fp-street/canadian-banks-got-slightly-better-deal-on-apple-pay-source
[72] http://www.pymnts.com/apple-pay-tracker/2016/is-apple-cutting-chinese-banks-an-apple-pay-fee-deal/

73. It has been reported that financial firms in Korea are preparing an application to the Korea Fair Trade Commission to require Apple to open up their NFC functionality to the applications developed by these firms.[73]

74. The Swiss consumer protection authority made a complaint to the Swiss competition commission Wettbewerbskommission regarding Apple's refusal to grant access to NFC functionality for third party payment apps. The competition commission has said that it will monitor the NFC mobile payment market. Apple Pay launched in Switzerland in July 2016, with support from three banks: Bonus Card, CornerCard and SwissBankers,[74] and a kiosk operator called Valora.[75] The largest banks in Switzerland (UBS, Credit Suisse, Raiffeisen, Zuercher Kantonalbank and Postfinance) have not signed up to Apple Pay. Instead, they have combined with the two largest retailers Migros and Coop, major telecom operator Swisscom and the stock exchange operator SIX to back the alternative mobile payment application Twint, as described earlier.[76]

VI. TRANSPARENCY AND EFFICIENCY IN PAYMENT SYSTEMS

75. A key component of the collective negotiation concerns removing the restriction on the ability to pass-through Apple Pay's fees to consumers. Issuers may choose not to impose charges on Apple Pay users for using Apple Pay, even if they are allowed to do so, due to competition between issuers and the importance iOS device users as a customer segment. However, the ability to impose such charges alone (and the potential for issuers to threaten to make use of it) is important and in the public interest as it may act to place a pricing constraint on Apple's fees. This is even more important in a scenario where Apple maintains exclusivity as there are no competitive NFC enabled integrated mobile wallets available on the iPhone to provide effective pricing pressure on Apple Pay's fees.

A. Reserve Bank policy on surcharges, fees, and transparency

76. The Reserve Bank of Australia (the RBA) has instituted policies surrounding surcharges, fees, and transparency in payments. These policies and the rationale behind them are consistent with economic theory.[77]

77. In the early 2000s the RBA began introducing regulations covering the application of card surcharges and the right of merchants to recover card charges from consumers. The aim of these regulations was to

[73] http://www.thepaypers.com/default/south-korean-companies-push-apple-to-open-up-apple-pay-technology/766164-0
[74] https://9to5mac.com/2016/07/07/apple-pay-launches-in-switzerland-with-mastercard-and-visa-bank-cards/
[75] http://www.finews.com/news/english-news/24397-ubs-apple-electronic-payment-systems
[76] http://www.finews.com/news/english-news/24397-ubs-apple-electronic-payment-systems
[77] See, e.g., Edelman, Benjamin G., and Julian Wright. "Price coherence and excessive intermediation," *Quarterly Journal of Economics* 130 (2015): 1283-1328.

ensure efficiency and competition in payments. In order to achieve these goals, the regulation was designed to ensure that consumers would face prices reflecting the cost of the payment method they chose to use, so that consumers' choices about which payment method to use would reflect a balance between consumer benefits and the cost of the payment method. RBA analysis indicates that improved pricing transparency and improved rights of merchants to recover payment costs, as well as reforms to interchange fees, have resulted in savings on payment costs of around $15 billion since 2004.[78] The RBA notes the impact of this saving on consumers: "*Just as other types of input costs feed through to final prices faced by consumers, the reduction in payment costs resulting from Australia's reforms will have fed through into lower prices for all consumers, regardless of what payment method they use*"[79]

78. The RBA also notes that Australia now has one of the lowest cost and most efficient card payments system internationally, at a time when the number of card payments made has also increased dramatically.[80] The suggestion is that transparency and price signaling to consumers increases competition and efficiency in the market.

79. The RBA recently announced changes to its previous surcharging regulations, effective September 2016 for large merchants and September 2017 for small merchants. The new regulations give merchants the right to apply a surcharge to cover costs they incur for card payments from consumers, capped at the cost of acceptance to the merchant for the particular payment scheme.[81] The objective of this change "is to promote efficiency and competition in the Australian payments system by providing for scheme rules that require participants to give merchants the freedom to make a charge for accepting payment of a particular kind that reflects the cost to the merchant of accepting that payment type."[82]

80. The merchant's cost of acceptance is calculated on a scheme-by-scheme and card type-by card type basis by summing the fees paid by the merchant to the acquiring bank (Merchant Service Fee) over the

[78] RBA, Review of Card Payments Regulation Conclusion Paper May 2016, http://www.rba.gov.au/payments-and-infrastructure/review-of-card-payments-regulation/pdf/review-of-card-payments-regulation-conclusions-paper-2016-05.pdf
[79] RBA, Review of Card Payments Regulation Conclusion Paper May 2016, http://www.rba.gov.au/payments-and-infrastructure/review-of-card-payments-regulation/pdf/review-of-card-payments-regulation-conclusions-paper-2016-05.pdf
[80] RBA, Review of Card Payments Regulation Conclusion Paper May 2016, http://www.rba.gov.au/payments-and-infrastructure/review-of-card-payments-regulation/pdf/review-of-card-payments-regulation-conclusions-paper-2016-05.pdf
[81] RBA, Review of Card Payments Regulation Conclusion Paper May 2016, http://www.rba.gov.au/payments-and-infrastructure/review-of-card-payments-regulation/pdf/review-of-card-payments-regulation-conclusions-paper-2016-05.pdf
[82] RBA, Review of Card Payments Regulation Conclusion Paper May 2016, http://www.rba.gov.au/payments-and-infrastructure/review-of-card-payments-regulation/pdf/review-of-card-payments-regulation-conclusions-paper-2016-05.pdf

previous 12-month period, divided by the total transaction value of card payments between the merchant and the cardholders of the relevant scheme and card type for that period. This average percentage fee is then the allowed customer surcharge that can be charged by the merchant. Monthly information on charges and transaction value must be sent by the acquiring bank to merchants accepting payment through the various schemes and card types.[83]

81. Requiring that merchant surcharges are related to cost of acceptance ensures that the price signal of different payment methods are clear to the consumer. From the Reserve Bank website: "*When merchants have the right to apply a surcharge to more expensive payment methods they are able to provide price signals that encourage consumers to use payment methods that are less expensive. By helping to hold down payment costs, the right to surcharge helps to hold down the price of goods and services charged to all consumers.*"[84]

B. The Reserve Bank policy on surcharges applies to the Apple Pay case

82. Three of the principles underlying the RBA's approach to card surcharges are especially relevant to the introduction of Apple Pay:[85]

a. *"Accurate price signals promote the efficient use of the payments system and the efficient allocation of resources. Distortions to price signals may lead to overuse of some payment methods.*

b. *Relative prices that do not reflect the relative resource costs of different payment systems (i.e. the relative costs to society) are likely to lead to a higher – cost payments system overall.*

c. *Transparency measures should be preferred to more intrusive regulatory measures where there is confidence that they can be applied effectively."*

83. The RBA considers that these policies are in the public interest. By allowing merchants to recover the payment fees charged to them, the incidence of cross-subsidization of those fees on other transactions goes down. The cost of more expensive payment methods, for example credit cards, are concentrated to those consumers who use them. Other consumers, for example those using debit cards with lower fees, do not pay for the more expensive payment methods, and have clear price signals to discriminate between

[83] RBA, Review of Card Payments Regulation Conclusion Paper May 2016, http://www.rba.gov.au/payments-and-infrastructure/review-of-card-payments-regulation/pdf/review-of-card-payments-regulation-conclusions-paper-2016-05.pdf
[84] RBA, Review of Card Payments Regulation Conclusion Paper May 2016, http://www.rba.gov.au/payments-and-infrastructure/review-of-card-payments-regulation/pdf/review-of-card-payments-regulation-conclusions-paper-2016-05.pdf
[85] RBA, Review of Card Payments Regulation Conclusion Paper May 2016, http://www.rba.gov.au/payments-and-infrastructure/review-of-card-payments-regulation/pdf/review-of-card-payments-regulation-conclusions-paper-2016-05.pdf

payment methods on the basis of price. This logic has been analyzed in the economic models of, e.g. Edelman (2015), who analyzes the inefficiencies and cross-subsidization that occurs as a result of no-surcharge restrictions.[86]

84. Apple is effectively imposing an extra intermediary transaction cost (or Apple Pay transaction tax) on retail transactions, decreasing consumer welfare through higher prices, as follows:

a. Total fees per transaction are higher using Apple Pay than using physical debit or credit cards;

b. This is equivalent to adding a tax to the system (which accrues to Apple rather than Australian producers);

c. Part of the additional fee will be passed on to consumers in the form of higher prices.

85. The Apple Pay transaction tax will affect consumer prices in the same way as traditional no-surcharge rules. Banks, which must pay the fee to Apple, will seek to recover the fee. There are a number of ways that this may occur, for example:

a. Banks may increase the card fees they charge to customers; or

b. Banks may increase the Merchant Service Fee, which will lead to increases in surcharges by charging merchants, who will seek to recover the fee by charging consumers.

86. Either of the two scenarios described above do not provide transparency around the relative cost of Apple Pay as compared to other payment systems and will lead to cross-subsidization of Apple Pay by cardholders more generally, irrespective of whether that cardholder uses Apple Pay or not.

87. In the scenario where the banks pass on the cost of Apple Pay to merchants through an increased Merchant Service Fee, given that merchant surcharges are set at the scheme and card type level, merchants will be unable to differentiate between customers who pay with Apple Pay and those who pay using a physical card. This means that merchants cannot add a surcharge specific to an Apple Pay transaction and, as a result, consumers will not receive a clear price signal of the cost of using Apple Pay relative to using the same card directly. The RBA's economic analysis of cross-subsidizing surcharges leading to higher prices overall will apply.

[86] Edelman, Benjamin G., and Julian Wright. "Price coherence and excessive intermediation," *Quarterly Journal of Economics* 130 (2015): 1283-1328.

88. Allowing the Apple Pay transaction tax to be passed through to consumers would give a clear price signal for Apple Pay amongst other payment methods. Transparent price signals would encourage competition, reduce those fees, and increase efficiency in mobile payments, leading to better mobile payment options for consumers. In fact, a successful negotiation on the pass-through issue is likely to place downward pressure on the fees that Apple requests for access to Apple Pay and is therefore likely to reduce transaction costs from what they otherwise might be. This is very similar to the ability of merchants to surcharge American Express card payments in Australia (as permitted by Amex's agreement to abide by the RBA card surcharging regulations), which has been used by merchants as a threat and has allowed them to negotiate lower Merchant Service Fees on American Express card transactions.

89. With full competition in the mobile payment space, it may be that there is sufficient downward pressure on mobile wallet payment fees so that fees for payment would be minimal (or non-existent).

C. The Apple Pay transaction tax and no-surcharge provisions will decrease consumer welfare

90. Without the ability to pass on Apple Pay's fees to consumers, the fees will ultimately get passed along to all cardholders and potentially all consumers. This is precisely the type of cross-subsidization that Reserve Bank policy sought to avoid. As stated by the Reserve Bank: "*[A no-surcharge provision] also reduces the extent to which those who pay with cheaper payment methods are subsidizing those consumers – typically from higher income households – who use more expensive payment methods.*"[87] This cross-subsidization will benefit heavy users of Apple Pay (who are more likely to be wealthy) at the expense of light users or non-users (who are typically poorer), and will lead to a rise in overall prices for consumers. Without clear price signals, consumers will over-adopt Apple Pay beyond their willingness to pay for it, further exacerbating the cross-subsidization and price increases. These effects lead to a decrease in consumer welfare, just as a higher sales tax would.

VII. ADDRESSING APPLE'S CLAIMS ON SEAMLESSNESS AND SECURITY

91. The major step forward in security for payments is changing from payment by swiping a card's magnetic strip to payment by NFC technology. This is already widespread across Australia in contactless card payments; as such, the enhanced security of Apple Pay is already in effect through contactless card payments and other mobile payments including Android Pay.

92. Apple argues that Apple Pay is seamless and secure, which are characteristics that consumers value, and that allowing other apps to access the iPhone's NFC functionality would compromise the ease of use of

[87] http://www.rba.gov.au/payments-and-infrastructure/review-of-card-payments-regulation/q-and-a/card-payments-regulation-qa-conclusions-paper.html

the Apple ecosystem and security. Other, less restrictive alternatives exist that would maintain objectives of seamless and secure user experiences.

93. Apple's exclusionary conduct has the implication that developing an application equivalent to Apple Pay is not an option for the banks. First, Apple imposes restrictions on the functionality that third party applications can use. Most notably, they restrict access to the NFC functionality. Second, Apple essentially competes with applications developed within the Apple ecosystem that conduct payments using a downloaded application, so it has an incentive to hobble the effectiveness of these apps. Apple has not made commitments to what its policies will be in the future, creating uncertainty about the returns to developing alternatives. Third, Apple Pay is presented as a default, and until iOS 10 couldn't be deleted. Fourth, users are repeatedly prompted to enter a card for Apple Pay upon setting up a new device and in the first 24 hours of new device. Allowing the banks' apps to access the NFC capability of the iPhone would improve the user experience, allowing users to seamless perform banking functions and make mobile payments from within the same application. The banks' apps will continue to be needed for banking functions which Apple Pay does not currently provide, for example checking their bank account balance whilst in the Apple Pay app. Indeed, many customers use their banking apps multiple times per day, and this may only increase as the range of services offered increases.

94. From a consumer welfare perspective, it is natural to allow the banks' apps to be "seamless," particularly where consumers may like the option of using their bank application to check their account balance prior to making a purchase, for example. In the future, further integration could see a bank offer add-on products such as warranty or insurance when consumers make payments.

95. Consumers have heterogeneous preferences, and it is unlikely that one application matches the preferences of all consumers. For those who prefer alternatives or additions to Apple Pay, welfare will increase if alternative applications and associated user experiences are available.

96. There is no evidence that other apps would be less secure than Apple Pay. There are less restrictive alternatives than forcing all payments to go through the Apple wallet to access NFC technology (and pay a non-transparent fee, as Apple proposes). Further, if Apple has consumers' interests in mind, it should recognize that consumers value security and will be willing to pay for these things through increased prices on the iPhone or by paying a transaction fee for using Apple Pay; and if Apple Pay is superior, Apple Pay should be able to compete on the merits against iOS bank apps that offer payments.

97. As another example of a less restrictive alternative, Apple could "white label" its payment application, allowing the banks to access the application (without a fee) through the bank application. Apple

could even specify certain aspects of the user experience and security systems but does not need to force the use of Apple Pay and does not need to charge a tax for using it.

VIII. IMPACTS ON MOBILE INNOVATION

98. By restricting access to the NFC technology, Apple will reduce incentive for innovation and invention in the mobile payment application market. Mobile payment apps without NFC technology are likely to attract lower levels of consumers, particularly in the Australian market where NFC contactless payments are already so widely used, resulting in lower profits and investment in the application.

A. Developers will limit investment without access to the lucrative iOS market

99. Restricting competition in iPhone mobile payment apps will cause lower innovation in Android apps as well. Most developers work on apps on the expectation of reaching both sets of consumers, and many would not invest as much (or at all) if they could only reach the Android market. Even though the consumer base on each platform is distinct, the incentives to invest are determined by the aggregate size of the market. Apps have some shared investment and some incremental costs to port to different platforms; the market as a whole determines the incentives to invest. Among the two platforms, the iOS platform has substantially more valuable consumers in terms of demographics and commercial activity.

100. As evidence of the superior desirability of the iPhone user base, the application Instagram was available in on the iPhone for 18 months before the Android version was released. The application built up a user base of 30 million on iOS, and focused on developing a high-quality experience for iPhone users, before making an application for Android phones.[88] This illustrates the value of the iOS audience in motivating innovation.

101. iPhone users are the most satisfied with their smartphone among Australian consumers.[89] Restricting developers' access to this highly engaged, tech-savvy and satisfied group of smartphone users will reduce the incentive to develop advanced mobile payment apps for the Australian market.

102. Although iPhone users are satisfied in general, for mobile payment apps Samsung is leading the way. In a 2016 survey of US mobile consumers, Samsung Pay scored a satisfaction rating of 92% while Apple Pay users scored lower, at 84%.[90] This further underscores the need to maintain innovation through competition

[88] http://www.macworld.com/article/1166236/instagram_release_illustrates_why_developers_pick_ios_over_android.html

[89] http://www.canstarblue.com.au/phone-internet/devices/smartphones/

[90] http://www.acg.net/27-of-the-eligible-population-is-using-mobile-payments-says-auriemma-consulting-group/

in the mobile payment application space, in order to provide consumers (both iOS and Android) with advanced alternatives to Apple Pay.

B. Investment is needed for high quality consumer experience

103. We note that out of the apps currently provided on Google Play by the applicant banks, **[CONFIDENTIAL – RESTRICTION OF PUBLICATION CLAIMED]** has invested the largest amount: **[CONFIDENTIAL – RESTRICTION OF PUBLICATION CLAIMED]** vs **[CONFIDENTIAL – RESTRICTION OF PUBLICATION CLAIMED]** each spent by **[CONFIDENTIAL – RESTRICTION OF PUBLICATION CLAIMED]** and **[CONFIDENTIAL – RESTRICTION OF PUBLICATION CLAIMED]**. Commonwealth Bank has achieved the highest customer score in Google Play (4.1 on a scale of 1-5, vs 3.8 and 3.6 for NAB and Westpac respectively). Seventy-nine Google Play reviews describe CBA's application as the "*best banking app*" (compared to 10 reviews saying this for NAB).[93] Access to the large, wealthy pool of iPhone users is needed in order to ensure that developers have sufficient incentive to invest the large sums needed to produce successful, high-quality mobile payment apps.

C. Competition will lead to improved consumer choice

104. Some consumers, for example older consumers, may trust their bank more than a smartphone provider, and will trust their bank more than Apple when conducting financial transactions. Thus, restricting mobile payments to occur only through Apple Pay may reduce their adoption.

105. As evidence of consumer heterogeneity in terms of preferences for payment technology, in the US only 3.5% of consumers age 65 and above made a proximity mobile payment in 2015; 25-34 year-olds were five times more likely to use the technology.[94] Meanwhile 18% of US consumers over 60 used mobile banking in the same year.[95] Although contactless payments are more widely used and accepted, Australian consumers may exhibit similar behavior. Since (1) older consumers are less likely to adopt mobile payment services than younger consumers, and (2) older consumers are substantially more likely to use mobile banking, there are potential benefits of providing mobile payment services through banking apps which older consumers are more comfortable with and more likely to use; those benefits would not be realized if banks are not given access to NFC technology to develop their own payment systems.

[93] Data from Google Play store, accessed 9/23/2016
[94] http://www.emarketer.com/Article/Mobile-Payments-Will-Triple-US-2016/1013147
[95] http://www.federalreserve.gov/econresdata/consumers-and-mobile-financial-services-report-201603.pdf

106. With fewer innovative apps on the market and a reduced market for those apps to serve (iPhone users represent 41% of Australian smartphone users[96]), there will be a reduced rate of mobile payment adoption than there would have otherwise.

IX. NET OUTCOMES FOR THE AUSTRALIAN ECONOMY

107. Without collective bargaining and the ability to boycott by the banks, ultimately Apple will likely prevail in its goals of adding an additional Apple Pay transaction tax on what may eventually become a large share of all transactions in Australia, as well as in preventing consumers from seeing transparent and accurate signals about the additional tax imposed on this payment mechanism.

108. The Apple Pay transaction tax will be transferred from Australian consumers to Apple, and the Australian economy will suffer as a result. In 2015, Apple paid $85 million in tax in Australia.[97,98] Between 2014 and 2015, revenue earned in Australia increased from $6 billion to $7.9 billion (by 32%), while tax paid increased from $80.3 million to $85million (by 6%).[99]

109. In contrast, if collective bargaining and the ability to boycott result in lower fees and less restrictive terms, we expect to see greater efficiencies in mobile payments. Beyond the obvious benefits of eliminating the distortions created by a high Apple Pay transaction tax, we also expect to see larger take up of mobile payments, due to heterogeneous consumer tastes and greater competition leading to more effective apps. This greater take up in turn will lead to more secure and faster payments, and greater commerce. In addition, there will be a greater incentive for financial institutions to invest in their mobile applications across all mobile phone platforms.

[96] http://landing.deloitte.com.au/rs/761-IBL-328/images/deloitte-au-tmt-mobile-consumer-survey-2015-291015.pdf
[97] http://www.smh.com.au/business/the-economy/apples-85-million-tax-bill-is-a-fraction-of-its-almost-8-billion-revenue-20160126-gmej0z.html
[98] http://www.smh.com.au/business/the-economy/apples-headache-is-the-start-of-tax-revenue-wars--and-australia-may-join-the-fight-20160830-gr528m.html
[99] http://www.smh.com.au/business/the-economy/apples-85-million-tax-bill-is-a-fraction-of-its-almost-8-billion-revenue-20160126-gmej0z.html

APPENDIX A: CURRICULUM VITAE OF SUSAN ATHEY

SUSAN CARLETON ATHEY

Stanford University
Graduate School of Business
655 Knight Way
Stanford, CA 94305
athey@stanford.edu

PERSONAL

Born November, 1970.
U.S. Citizen.

EDUCATION

Duke University
Bachelor of Arts, 1991.
Majors in economics, mathematics, and computer science.
Magna Cum Laude. Phi Beta Kappa.

Stanford Graduate School of Business
Ph.D., 1995
Dissertation: "Comparative Statics in Stochastic Problems with Applications."
Advisors: Paul Milgrom and John Roberts (co-chairs), Edward Lazear.

CURRENT POSITIONS

Stanford University Graduate School of Business
2014-present The Economics of Technology Professor
2013-2014 Professor of Economics
National Bureau of Economic Research
2001-present Research Associate. Co-organizer of Productivity and Information Technology/Digitization; Founding co-director of Market Design Working Group, 2008-2014.

PAST POSITIONS

Harvard University
2006-2012 Professor of Economics
Center for Advanced Study in the Behavioral Sciences
2004-2005 Fellow
Department of Economics, Stanford University
2001-2004 Associate Professor of Economics
2004-2006 Holbrook Working Professor of Economics and Professor (by courtesy) in the Graduate School of Business
Department of Economics, Massachusetts Institute of Technology
1999-2001 Castle Krob Career Development Associate Professor of Economics
1997-1999 Castle Krob Career Development Assistant Professor of Economics
1995-1997 Assistant Professor of Economics
Cowles Foundation for Economic Research, Yale University
1997-1998 Visiting Assistant Professor of Economics

Hoover Institution, Stanford University
2000-2001 National Fellow
National Bureau of Economic Research
1997-2001 Faculty Research Fellow

OTHER POSITIONS

2008-present Visiting/Consulting Researcher, Microsoft Research, New England
2007-2016 Consultant to Microsoft Corporation.
2001-present Principal, Market Design, Inc.
April,1999; October, 2000; February, 2001 Consultant, Research Department, Minneapolis Federal Reserve Bank
May, 1998 Visiting Professor, I.D.E.I. Toulouse.

CURRENT PROFESSIONAL ACTIVITIES

- Advisory Board, Toulouse School of Economics, 2010-15.
- Member, President's Committee for the National Medal of Science (Presidential Appointment, two consecutive terms), 2011-present.
- Honors and Awards Committee, American Economics Association, 2013-2016.
- Member, National Academies Board on Science, Technology and Economic Policy Innovation Policy Form, 2013-2015.
- Member, National Academies Committee on Science, Engineering, and Public Policy, 2013-2016.
- Member, Nominating Committee for American Academy of Arts and Sciences, 2011-2012.
- Co-organizer of Productivity and Information Technology/Digitization, National Bureau of Economics Research, 2009-present.

PAST PROFESSIONAL ACTIVITIES

- Membership Committee, National Academy of Science, 2013-2016.
- NBER, Founding co-director of Market Design Working Group, 2008-2014.
- Cambridge Economics Economics and Computational Day, co-founder, 2011.
- Council, Game Theory Society, 2009-2012. (elected position).
- Associate Editor, *Theoretical Economics*, 2005-2011.
- Council, Econometric Society, 2007-2010. (elected position)
- Executive Committee, American Economic Association, 2008-2010. (elected position)
- Advisory Committee on Editorial Appointments, American Economics Association, 2011.
- Co-Editor, *American Economic Journals: Microeconomics*, 2007-2008.
- Associate Editor, *Econometrica*, 2006-2007.
- Associate Editor, *Quarterly Journal of Economics*, 2001-2007.
- Editorial Board, *Not a Journal Economics*, 2001-2008.
- Fellows Nominating Committee, Econometric Society, 2006.
- Elaine Bennett Research Prize Committee (AEA/CSWEP), 2002, 2004, 2006 (Chair).

- Chair, Program Committee, Winter Meetings of the Econometric Society, 2006.
- National Science Foundation Economics Panel, 2004-2006.
- Co-director, Market Design Program, Stanford Institute for Economic Policy Research, 2004-2006.
    - Mentor, CeMent Mentoring Workshop, AEA/CSWEP, 2006.
- Young Faculty Nominating Committee, Center for Advanced Study in the Behavioral Sciences.
- Associate Editor, *American Economic Review*, 2002-2005.
- Associate Editor, *RAND Journal of Economics*, 2002-2004.
- Foreign Editor, *Review of Economic Studies*, 2001-2004.
- American Economic Association Nominating Committee, 2003.
- Stanford University Fellow, 2002-2004.
- Co-editor, *Journal of Economics and Management Strategy*, 1997-2001.
- Program Committee, Summer Meetings of the Econometric Society, 1997 and 1998; 8th World Congress of the Econometric Society, 2000; Winter Meetings of the Econometric Society, 2001 and 2005.

HONORS

- Jean-Jacques Laffont Prize (to be awarded November 2016).
- Corresponding Fellow, British Academy of Science, elected 2016.
- Knight Fellows Favorite Professor Award, Stanford University, 2014.
- 2013 Best Paper Award, *American Economic Journal: Microeconomics*.
- Fellow, Society for the Advancement of Economic Theory, 2013.
- Member, National Academy of Science, elected 2012.
- Honorary degree, Duke University, 2009.
- Fellow, American Academy of Arts and Sciences, elected 2008.
- John Bates Clark Medal, 2007.
- Fellow, Econometric Society, elected 2004.
- Guggenhime Faculty Scholar, Stanford University, 2004-2006.
- Elaine Bennett Research Award, 2001.
- Sloan Foundation Research Fellow, 2000.
- Undergraduate Economics Association Teaching Award, 1995-1996.
- Review of Economic Studies Tour, 1995.
- Stanford University Lieberman Fellow, 1994-1995.
- State Farm Dissertation Award in Business, 1994.
- National Science Foundation Graduate Fellowship, 1991-1994.
- Jaedicke Scholar, Stanford Graduate School of Business, 1992-1993.
- Mary Love Collins Scholarship, Chi Omega Foundation, 1991-1992.
- Duke University Alice Baldwin Memorial Scholarship, 1990-1991.

DISTINGUISHED LECTURES

- Distinguished Lecturer, Department of Economics, Columbia, 2016

- Distinguished Lecture Series, Carnegie Mellon, 2016
- Manchot Lecture, Bonn, 2016
- WZB Distinguished Lecture in Social Sciences, 2016
- Keynote, Knowledge Discovery and Data Mining (KDD), Sydney, 2015
- Henry George Lecture, University of Scranton, 2015
- Milliman Lecture, University of Washington, 2015
- George Staller Lecture, Cornell, 2015
- Fathauer Lecture, University of Arizona, 2015
- The GSB Salon, Stanford-Bejing Lecture, 2015
- Woytinksy Lecture, University of Michigan, 2014.
- Leigh Lecture, Washington State University, 2014.
- Central Planning Bureau Lecture, Netherlands, 2014.
- Keynote, DIMACS Workshop on Economic Aspects of Information Sharing, 2013.
- Association Lecture, Southern Economics Association, 2013.
- Keynote, Searle Antitrust Conference, 2012.
- Sir Richard Stone Annual Lecture, Cambridge University, 2012.
- Dunaway Lecture, Michigan State University, 2012.
- Keynote, 2011 MIT Center for Digital Business Annual Conference
- Keynote address, 2011 Southern California Symposium on Network Economics and Game Theory.
- Keynote address, International Joint Conferences on Artificial Intelligence, Barcelona, July 2011.
- Fisher Schultz Lecture, Econometric Society, 2011.
- Plenary Lecture for Society of Economic Dynamics, 2010.
- Plenary Lecture for joint meeting of Electronic Commerce and Theoretical Aspects of Rationality and Knowledge, 2009.
- Society of Economic Design Plenary Lecture, 2008.
- Frank Hahn Lecture, Royal Economic Society Conference, 2008.
- John F. Nash, Jr., Lecture, Carroll Round, Georgetown, 2008.
- Schultz Lecture, University of Chicago, 2007.
- Toulouse Lectures in Economics, 2007.
- Invited Speaker, 9th World Congress of the Econometric Society.
- Johnson Distinguished Lecturer in Economics, Duke University, 2004.

GRANTS AND RESEARCH AWARDS

- "Private Information and Dynamic Games," NSF Grant No. SES-0351500.
- "Private Information in Auctions, Pricing Games, and Ongoing Relationships," NSF CAREER Award No. SES-9983820.
- "Bidding Behavior in U.S. Forest Service Timber Auctions," MIT Provost's Fund for Humanities, Arts, and Social Sciences Research Award, 1997.
- "Empirical Tests for Complementarities: A Structural Approach," MIT Sloan School of Management, Creative Research Award, 1996 (with Scott Stern).

- "Comparative Statics: Theory and an Empirical Framework for Testing Predictions," NSF Grant No. SBR-9631760.
- "Product and Process Innovation," William Miller Fund, Stanford GSB.

JOURNAL ARTICLES

1. "The Impact of the Internet on Advertising Markets for News Media" (with Emilio Calvano and Joshua Gans). Forthcoming, *Management Science*.
2. "Exact P-values for Network Interference" (with Dean Eckles and Guido Imbens). Forthcoming, *Journal of the American Statistical Association.*
3. "Recursive Partitioning for Heterogeneous Causal Effects" (with Guido Imbens), *Proceedings of the National Academy of Science* 2016 113 (27) 7353-7360.
4. "A Measure of Robustness to Misspecification" (with Guido Imbens), *American Economic Review*, May 2015, 105 (5), 476-480.
5. "Dynamics of Open Source Movements," (with Glenn Ellison), *Journal of Economics and Management Strategy*, 2014, 23 (2), 294-316.
6. "An Efficient Dynamic Mechanism," (with Ilya Segal), *Econometrica*, 2013, 81 (6), 2463-2485.
7. "Subsidies and Set-Asides in Auctions," (with Jonathan Levin and Dominic Coey). *American Economic Journal: Microeconomics*, 2013, 5 (1), 1-27. Winner: 2013 Best Paper Award, *American Economic Journal: Microeconomics*.
8. "Position Auctions with Consumer Search," (with Glenn Ellison). *Quarterly Journal of Economics*, 2011, 126(3), 1213-1270.
9. "Comparing Open and Sealed Bid Auctions: Theory and Evidence from Timber Auctions," (with Jonathan Levin and Enrique Seira). *Quarterly Journal of Economics*, 2011, 126(1), 207-257.
10. "The Impact of Targeting Technology on Advertising Markets and Media Competition," with Joshua Gans, *American Economic Review*, May 2010.
11. "Skewed Bidding in Pay Per Action Models of Online Advertising," with Nikhil Agarwal and David Yang. *American Economic Review*, May 2009.
12. "Collusion with Persistent Cost Shocks," (with Kyle Bagwell). *Econometrica*, May 2008, 76 (3), 493-540.
13. "Designing Efficient Mechanisms for Dynamic Bilateral Trading Games," (with Ilya Segal), *American Economic Review*, May 2008.
14. "Efficiency in Repeated Trade with Hidden Valuations," (with David Miller). *Theoretical Economics*, 2007, 2 (3), 299-354.
15. "Discrete Choice Models with Multiple Unobserved Choice Characteristics," (with Guido Imbens). *International Economic Review*, 2007, 48 (4), 1159-1192.
16. "What Does Performance in Graduate School Predict? Graduate Economics Education and Student Outcomes" (with Larry Katz, Alan Krueger, James Poterba, and Steve Levitt), *American Economic Review*, May 2007.
17. "Identification and Inference in Nonlinear Difference-In-Difference Models," (with Guido Imbens). *Econometrica* 74 (2), March, 2006, 431-498.
18. "The Optimal Degree of Monetary Policy Discretion," (with Andrew Atkeson and Patrick Kehoe), *Econometrica* 73 (5), September, 2005, 1431-1476.

19. "Collusion and Price Rigidity," (with Kyle Bagwell and Chris Sanchirico). *Review of Economic Studies* 71 (2), April 2004, 317-349.
20. "Identification in Standard Auction Models," (with Philip Haile), *Econometrica*, 70 (6), *November* 2002, pp. 2107-2140.
21. "The Impact of Information Technology on Emergency Health Care Outcomes," (with Scott Stern), *RAND Journal of Economics*, 33 (3), Autumn 2002, pp. 399-432.
22. "Monotone Comparative Statics Under Uncertainty," *Quarterly Journal of Economics*, February 2002, CXVII (1): 187-223.
23. "Optimal Collusion with Private Information," (with Kyle Bagwell), *RAND Journal of Economics*, Autumn 2001, 32 (3): 428-465.
24. "Single Crossing Properties and the Existence of Pure Strategy Equilibria in Games of Incomplete Information," *Econometrica* 69 (4), July, 2001: 861-890.
25. "Organizational Design: Decision Rights and Incentive Contracts," (with John Roberts), *American Economic Review*, May 2001.
26. "Information and Competition in U.S. Forest Service Timber Auctions," (with Jonathan Levin), *Journal of Political Economy*, 109 (2), April 2001. Reprinted in: Empirical Industrial Organization, Paul Joskow and Michael Waterson, ed., Critical Ideas in Economics, Edward Elgar, forthcoming 2004.
27. "Investment and Market Dominance," (with Armin Schmutzler), *RAND Journal of Economics* 32 (1), Spring 2001: 1-26.
28. "Mentoring and Diversity," (with Chris Avery and Peter Zemsky), *American Economic Review* 90 (4) September 2000: 765-786.
29. "Information Technology and Training in Emergency Call Centers." (with Scott Stern). *Proceedings of the Fifty-First Annual Meetings* (New York, Jan 3-5, 1999). Madison, WI: Industrial Relations Research Association, pp. 53-60.
30. "Product and Process Flexibility in an Innovative Environment," (with Armin Schmutzler), *RAND Journal of Economics*, 26 (4) Winter1995: 557-574.

BOOKS/SURVEYS/CONFERENCE VOLUMES

1. "The State of Applied Econometrics - Causality and Policy Evaluation," with Guido Imbens, in preparation for *Journal of Economic Perspectives.* http://arxiv.org/abs/1607.00699
2. "The Econometrics of Randomized Experiments," with Guido Imbens, in preparation for *Handbook of Development Economics.* http://arxiv.org/abs/1607.00698
3. "The Nature and Incidence of Software Piracy: Evidence from Windows" (with Scott Stern), forthcoming, *The Economics of Digitization*, University of Chicago Press.
4. *Dynamic Games and Contracts with Hidden Information*, In Progress. Toulouse Lectures in Economics 2007, Princeton University Press.
5. "Empirical Models of Auctions," in *Advances in Economics and Econometrics: Theory and Applications, Ninth World Congress, Volume II*. Richard Blundell, Whitney K. Newey, Torsten Persson, eds., Cambridge University Press, 2007.
6. "Nonparametric Approaches to Auctions," forthcoming, *Handbook of Econometrics*, Volume 6.
7. *Robust Comparative Statics* (with Paul Milgrom and John Roberts), research monograph (draft form).

8. "Adoption and Impact of Advanced Technologies in Emergency Response Systems," (with Scott Stern), in *The Changing Hospital Industry: Comparing Not-for-Profit and For-Profit Institutions*, David Cutler, ed. University of Chicago Press, 2000, pp. 113-155.

WORKING PAPERS/UNDER REVIEW

1. "Bitcoin Pricing, Adoption, and Usage: Theory and Evidence," with Ivo Parashkevov, Vishnu Sarukkai, Jing Xia.
2. "Efficient Inference of Average Treatment Effects in High Dimensions via Approximate Residual Balancing" (with Guido Imbens and Stefan Wager). http://arxiv.org/abs/1604.07125
3. "Estimating Treatment Effects using Multiple Surrogates: The Role of the Surrogate Score and the Surrogate Index" (with Raj Chetty, Guido Imbens and Hyunseung Kang). http://arxiv.org/abs/1603.09326
4. "Estimation and Inference of Heterogeneous Treatment Effects using Random Forests" (with Stefan Wager), Working Paper, 2015. http://arxiv.org/abs/1510.04342 Revise and resubmit, *Journal of the American Statistical Association.*
5. "Finite Population Standard Errors" (with Guido Imbens), Working paper, 2014, revise and resubmit, *Econometrica.*
6. "A Structural Model of Sponsored Search Advertising Markets" (with Denis Nekipelov). Working paper, 2012. Under review.
7. "The Impact of News Aggregators on Internet News Consumption: The Case of Localization" (with Markus Mobius). Working paper, 2012.
8. "Peaches, Lemons, and Cookies: Designing Auction Markets with Dispersed Information." With Moshe Babaioff, Michael Grubb and Ittai Abraham. Working paper, 2012.
9. "Exchange Rate Fluctuations, Consumer Demand, and Advertising: the Case of Internet Search" (with Maya Cohen Meidan). Working paper, 2011.
10. "A Theory of Group Formation and Social Hierarchy," (with Saumitra Jha and Emilio Calvano). Working Paper, 2010.
11. "Characterizing Properties of Stochastic Objective Functions," MIT Working Paper 96-1R. *Revise & Resubmit, B.E. Journals in Theoretical Economics.*
12. "Investment and Information Value for a Risk-Averse Firm," MIT Working Paper No. 00-30. *Revise & Resubmit, B.E. Journals in Theoretical Economics.*
13. "The Value of Information in Monotone Decision Problems," (with Jonathan Levin), MIT Working Paper No. 98-24, November 1998.
14. "An Empirical Framework for Testing Theories about Complementarities in Organizational Design," (with Scott Stern). NBER Working Paper 6600, February 1998. *Revise & Resubmit, Management Science.*
15. "The Allocation of Decisions in Organizations," (with Joshua Gans and Scott Stern), Mimeo, MIT, 1996.

WORK IN PROGRESS

1. “Counterfactual Inference for Consumer Choice Across Many Products” (with David Blei, Robert Donnelly, Fran Ruiz, and Dustin Tran).
2. “Multi-armed Contextual Bandits with Random Forests” (with Wenfei Du and Guido Imbens).
3. “Social Media and News Consumption” (with Markus Mobius and Jeno Pal), Working paper, 2013.
4. “Internet Information Gathering and Stock Returns: Evidence from Ticker Lookups” (with Stefano Della Vigna), Working paper, 2013.
5. “Consumer Tracking and Efficient Matching in Online Advertising Markets (with Emilio Calvano and Joshua Gans). In progress.
6. “Dynamic Auctions with Persistent Private Information,” (with Kyle Bagwell).
7. “Authority and Incentives,” (with John Roberts).

TEACHING

- MBA: Economics of Internet Search, Platform Competition in Digital Markets, Financial Technology
- Graduate: Machine Learning and Causal Inference, Economics of Information Technology, Market Design, Advanced Topics in Game Theory, Industrial Organization, Contract Theory, Microeconomic Theory.
- Undergraduate: Market Design, Industrial Organization, Intermediate Applied Microeconomics.

NON-ACADEMIC HONORS

- World Innovation Summit on Entrepreneurship and Innovation’s World’s Most Innovative People Award, 2012.
- World Economic Forum Young Global Leader, selected 2008.
- Fast Company's 100 Most Creative People in Business
- Diversity MBA's Top 100 under 50 Diverse Executives
- Kilby Award Foundation's Young Innovator Award, 1998.