

Central Bank Digital Currency (CBDC) Aparangi ā Te Pūtea Matua

CBDC Forum Session 2

Wednesday, 28 September 2022



Reserve Bank
of New Zealand
Te Pūtea Matua

Nau mai, haere mai Welcome

Robbie Taylor

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Housekeeping

Robbie Taylor / Dave Corbett



Relationship Charter.

The Reserve Bank aspires to build and maintain the best 'regulator/regulated' supervisory relationships possible, with all the different regulated entities. This Charter represents a mutual undertaking of how the parties will work together to achieve this aspiration. We will regularly measure our performance against the commitments set out in the Charter and share the lessons.

Our mutual commitments

Our behaviours will be

Honest

positions are openly stated, constructively, freely and frankly

Diligent

provide clear expectations and deliver on them

Achievement focused

work together to achieve sound and efficient outcomes

Open-minded

each other's perspective is constructively sought and understood

Professional

disagreements can happen on issues, not people

Our communication will be

Clear

easily understood, with decisions explained

Targeted

made to the right people in governance and management

Consistent

one organisation, one message, one tone

Timely

communication with no surprises

Ground rules

Relationship charter

- Respecting diversity of background, thought and expression
- Encouraging participation and fun
- Chatham House rules

Probity

- No anti-competitive behaviour (price-setting, division of markets, agreements lessening competition, cartels etc), and raise a hand if concerned
- This is a “sales pitch free zone”
- Mis/representing CBDC Forum membership or its work



CBDC Forum members

Name	Organisation	Name	Organisation
Adrian Smith	BlinkPay	Alexandra Sims	University of Auckland
Brian Bonar	ANZ	Conrad Morgan	Worldline
David Corbett	PowerFinance	Fran Strajnar	Techemy
Jane Retimana	Payments NZ	Jennifer Ferreira	Victoria University
Joanne Dacombe	Disabled Persons Assembly	David Ison (sub)	Foodstuffs
Michelle Kitney	Volunteering NZ	Mitchell Pham	FintechNZ
Paul Quickenden	EasyCrypto	Simon Jensen	Buddle Findlay
Edwin Budding (sub)	BNZ	Andrew Dodd	ASB

Chair and secretariat

Chair	Robbie Taylor
Secretariat	Sam Kirk-Reeve - liaison
	Makoto Seta – policy lead
RBNZ Team	Amber Wadsworth
	Bella Di Mattina-Beven
	Tim Duston
	Kate Johnson

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Agenda for today

Time	#	Item	Presenters
10:00am	1.	Welcome & update from Reserve Bank	Robbie Taylor
10:30am	2.	Starter exercise	
10:45am		Break	
10:50am	3.	Member-led session: What is the size of the prize?	s 9(2)(g)(i)
12:05pm	4.	Privacy playback & update from first meeting	Bella Di Mattina-Beven
12:25pm		Lunch	
1:00pm	5.	User needs validation	Kate Johnson, Amber Wadsworth & Makoto Seta
1:40pm	6.	Member-led session: International dimensions	s 9(2)(g)(i)
2:10pm		Break	
2:20pm	7.	Open discussion	
2:50pm	8.	Wrap up	
3:00pm		End	

Item 1:

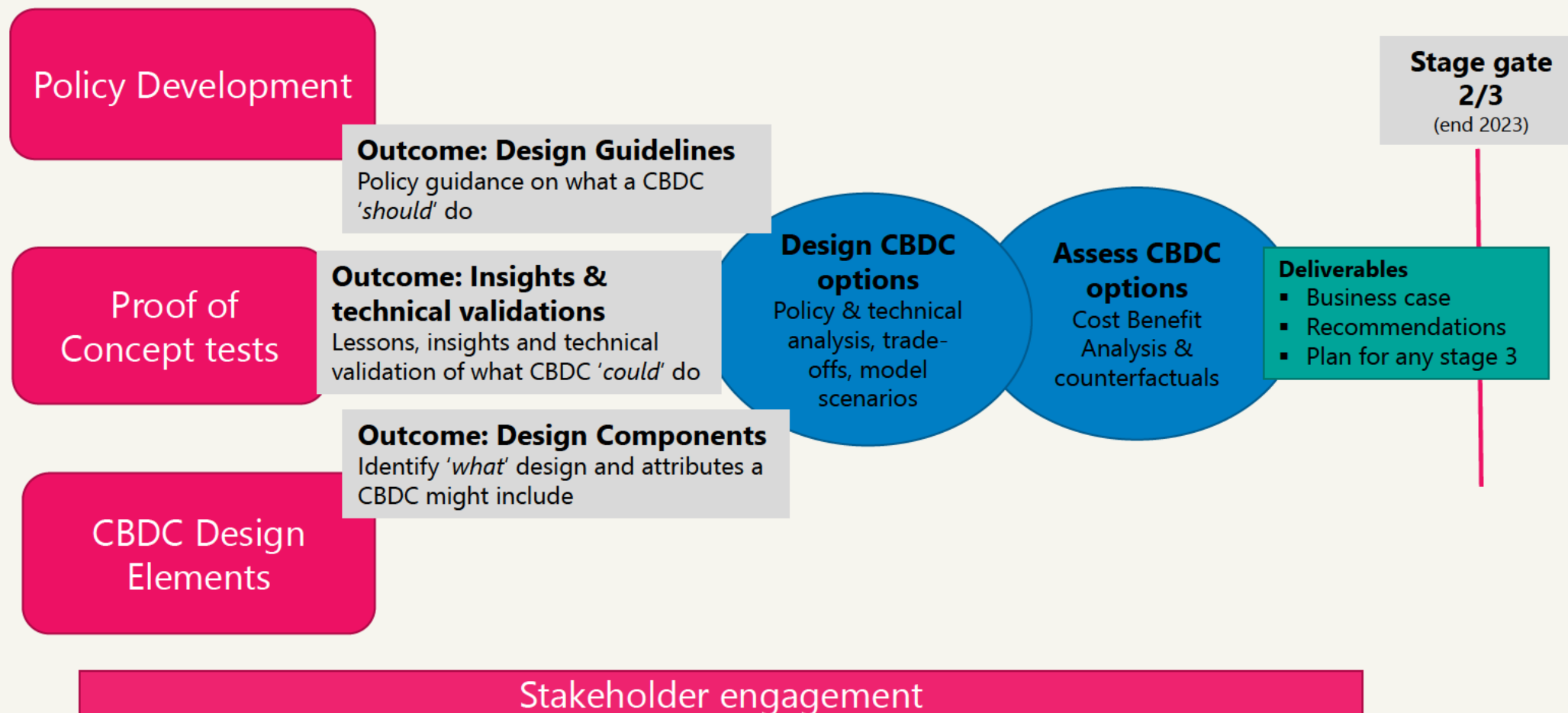
Update from Reserve Bank

Robbie Taylor

Outline

- Our CBDC Work Program for Stage 2
- Stakeholder engagement
- Our drivers of a CBDC

High level schedule for Stage 2





(1) Policy analysis

- Set of policy development work underway as part of 'Stage 2'
- Outcome is to provide policy guidance on what a NZ CBDC '*should*' do in order to achieve our objectives
- Informs future CBDC design options and assessments

Efficiency & Resilience

- Competition, interoperability and innovation
- Efficiency & innovation indicators

User Focus

- User needs research (*on this agenda*)
- Privacy (*update on this agenda*)
- Financial inclusion

Governance & Issuance

- Managed issuance of CBDC (i.e. balance sheet impacts)
- Legal foundation
- Governance



(2) Proof-of-concept (PoC)

- Preparing procurement processes and RFP for CBDC consultancy services including a technical proof of concept (PoC) simulation environment
- Advice, lessons, insights and technical validation of what CBDC 'could' do
- Build knowledge to help inform analysis of CBDC policy, technical and legal considerations. Provide hands on experience and experiments. Help assess technical and operational feasibility
- PoC to start H1 2023
- Closed consultancy & PoC (RBNZ internal only – no stakeholders)
- *Note: Limitations on how much we can discuss this currently, due to procurement process considerations*



(3) Stakeholder engagement

- Feedback theme from 2021 issues paper was the need for constructive and ongoing stakeholder engagement
- CBDC Forum is the core stakeholder engagement vehicle
- Range of group and bilateral engagements. Notable engagements:
 - Banks (30 Aug)
 - Fintech community (29 Sept)
 - Payment service providers (tentative late 2023)
- RBNZ actively engaged across network of central banks on CBDC



Drivers of CBDC: RBNZ Context

- Our Steward of Money role arises directly from changes to the RBNZ Act 2021
- At the centre of our interest as Steward of Money is ensuring the core roles of central bank money are protected, being:
 - A stable & trusted anchor of value, and confidence and convertibility in our money
 - A fair and equal way to pay (now and in the future) in our modern and inclusive economy (wellbeing and inclusion)
- Reliable and efficient money and payments systems support innovation and inclusion
- A range of policy initiatives are underway to support our role as Steward of Money. Our CBDC work is one part of this work.



Central bank money is critical

Central bank money is a value anchor

Basis for commercial bank money (1:1 exchange promise; settlement accounts)

Underpins confidence in the value of what is being exchanged in the financial system

Central bank money contributes to financial and social inclusion

Central bank money is issued to benefit NZ not to earn profit

Public good aspects – takes account of positive externality of money

Enables well-being enhancing exchange in NZ

The role of central bank money is underpinned by its enduring stability that stems from trust in the government and New Zealand's legal institutions. Private entities are less able to replicate this stability of money.





Trends & Opportunities

1. A continuing decline in the use of cash in transactions
 - Putting pressure on resilience of the cash system
 - Posing risks cash can't perform its core functions
2. New private digital innovation in money and payments
 - Leading to emergence of new forms of private money, and
 - Possible emergence of new dominant players in money and payments
3. Opportunity to innovate and future proof the technology of central bank money and payments

Objectives & desired outcomes for a CBDC

Our **objectives** for a CBDC

To ensure that central bank money is available to New Zealanders and allow it to be used digitally (Primary)

To contribute to the innovation, efficiency and resilience of New Zealand's money and payments ecosystem (Secondary)

The **outcomes** we are seeking

Central bank money continues to remain relevant in the digital age and used by individuals and business

Central bank money supports wider digital financial inclusion and wellbeing

Central bank money continues to provide a stable anchor of value and confidence and convertibility of our money

Enable a money and retail payments ecosystem that is more open, innovative and competitive

Contribute to the development of New Zealand's digital economy



Item 2:

Warm-up exercise

Where do you sit?

Where do you sit?

Where did / do you sit on the adoption curve for the following technologies?

Write your name on a post-it and place where you sit on each of adoption curves. Are you an....

- Early adopter?
- Early majority?
- Late majority?
- Late adopter?



Electric cars



Social media



Apple/Google Pay



Wearables



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Item 3: Member-led session

What is the size of the prize?

s 9(2)(g)(i)

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Item 4:

Privacy playback & update from the first meeting

Bella Di Mattina-Beven

Purpose of this presentation

Last session we spoke at length about privacy and the various approaches in New Zealand

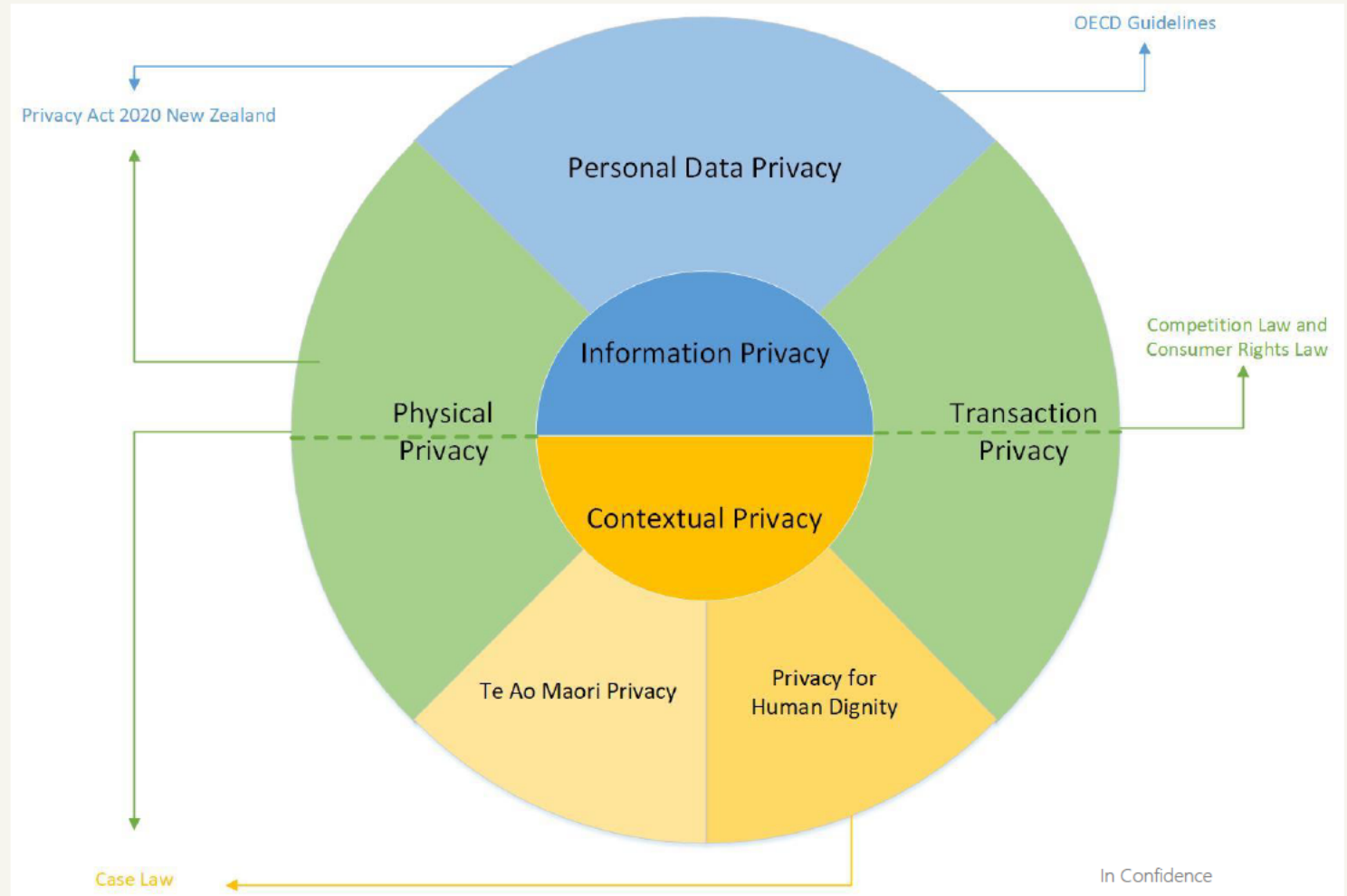
This presentation reports back on that session and sets out some of our key findings and suggested policy approaches for privacy in CBDCs

We would like to hear your feedback on this approach and make sure it reflects the views expressed at our last session



Ontology themes

- Information/data privacy
 - Information privacy
 - Transactional privacy
- Contextual privacy
 - Physical privacy
 - Privacy as dignity
 - Te Ao Māori privacy



CBDC Forum Whiteboard Activity

te ao maori view
legit surveillance

distrust

self-determination eCNY - 4 levels

managed access Privacy is not binary te ao maori view - structural distrust

choose how to express

ourself Control Protection Security

connected to other payments systems collective privacy with whanau and their finances

Distrust - Chinese bank runs - Use of digital products for control

Consistency Express ourselves selectively Data Access vs ownership

Confidentiality Encryption Integrity who accesses

Trust in currency Trust in payments system network

Logging of an event

don't want others in their business

cash is not digital, not record

digital safety

Anonymity Pseudonomous data

Tracing events

distrust from lack of understanding

loyalty cards payment messages

government control

impacts physical safety

data can be stolen, information misused

ethnic differences in privacy needs

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Personal data privacy



Privacy dimension	Implications for CBDC design
Personal data privacy	A CBDC design must: <ul style="list-style-type: none">• comply with the Privacy Act 2020• minimise data collection in accordance with Principle 1 of the Act• have good data governance• address cybersecurity concerns• consider whether unique identifiers will be used• collect minimum personal data for AML/CFT and other trade offs, affecting personal data privacy
Physical privacy Contextual privacy implicates physical privacy when users fear coercive responses to data collection.	
Transaction privacy Some users have privacy concerns about their overall transaction histories.	
Te Ao Māori privacy Te Ao Māori conceptions of privacy are distinct from western privacy and reflect a collective approach to knowledge	
Privacy as human dignity Even when privacy is protected, individuals feel their information could be used for coercive purposes.	

Physical privacy



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Privacy as human dignity



Privacy dimension

Implications for CBDC design

Personal data privacy

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Physical privacy

Contextual privacy implicates physical privacy when users fear coercive responses to data collection

A CBDC design should address user fear when collecting data.

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Transaction privacy

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Privacy as human dignity

Even when privacy is protected, individuals feel their information could be used for coercive purposes

A CBDC that adheres to the Privacy Act will not necessarily address all privacy needs of users. Users need to feel a sense of trust and freedom to feel their privacy is protected.

A CBDC design must communicate to, and educate, users the way their data will be accessed, collected, used and stored. This could include data visibility to users.

Noting the user concern for government and digital spaces, CBDC design must consider data minimisation and data governance (discussed above) to enhance user trust. In particular, design must consider who should hold the data of end users.

Item 5:

User needs validation

Understanding our users

Kate Johnson, Amber Wadsworth & Makoto Seta

Hitori | Background



Our Goal

- To define our policy position for CBDC and for the cash system redesign we need to understand **what New Zealander's want and need** from central bank money
- Ultimately want to understand users' **attitudes** and **motivations** to help inform policy design
- Aim to do this via **market research** and use the outputs from this to inform the policy work streams on CBDC and on cash system redesign, as well as being useful for any future work on payments



Purpose

- A lot of work done already – cash and inclusion and wellbeing
- Needed to come together and share what **we knew already** and agree on **what we wanted to explore** further through market research



Hitori | Background

**What do NZers want
and need from money
and how might
Te Pūtea Matua be
able to fulfil those
needs?**

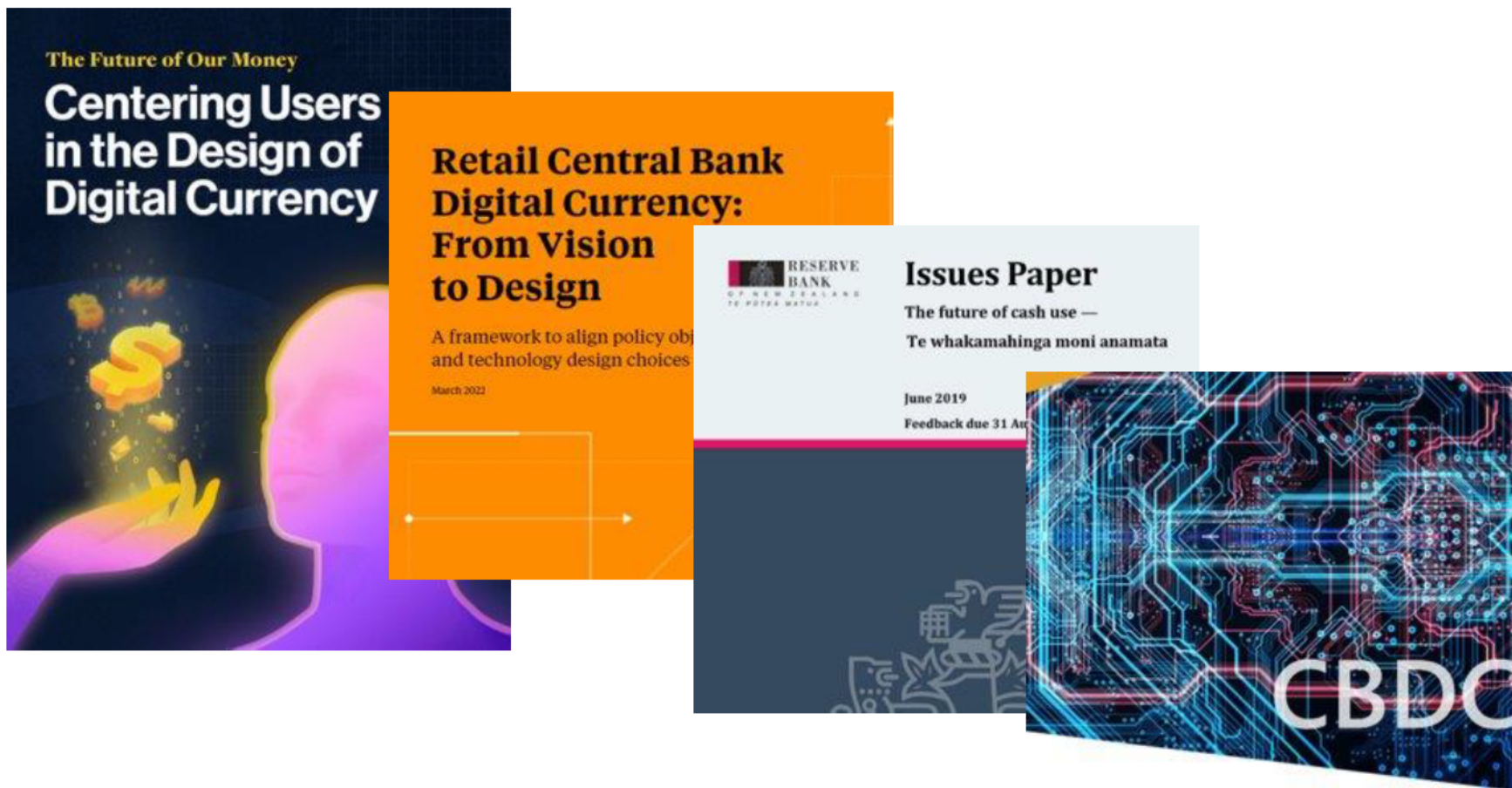


“You’ve got to start with the customer experience and work back toward the technology, not the other way around.”

- Steve Jobs



Te Aronga | Approach



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**Central bank digital currencies:
user needs and adoption**
September 2021

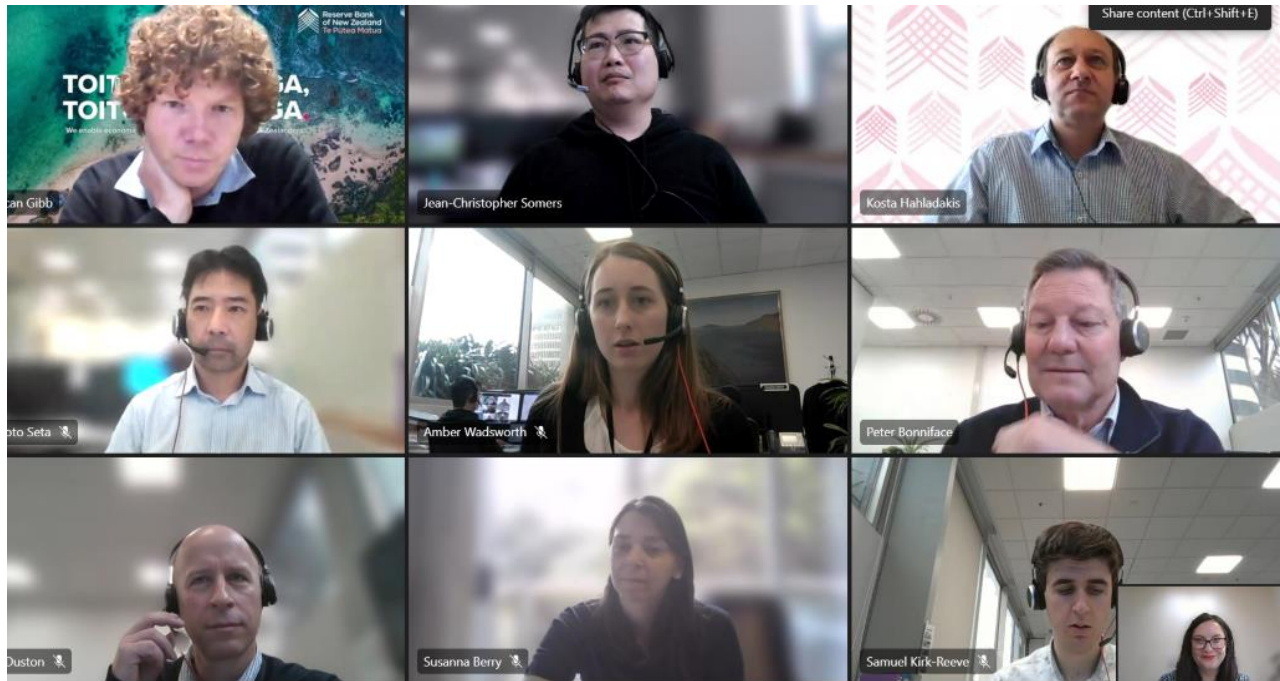
In Confidence



Te Aronga | Approach

Held workshops to explore:

- What we knew already
- Identify our assumptions
- Identify gaps in knowledge



Tēnei Rā | Today

- Share:
 - What we know already
 - What we want to find out during our market research
- Get your feedback
- Outline our next steps



What we would like to know from you

Think about your feedback in terms of:

- Share any **insights** you have
- Was there **anything significant** that we **missed**?
- Any **general feedback**



Kaihoko me Ngā kaihokohoko | Consumers and Merchants

Payments are a two-sided market. The use of a new service relies on both **consumer adoption** and **merchant acceptance**.



Kaihoko Consumers

A person or organisation
paying for goods, services or
donating

Payer



Ngā kaihokohoko Merchants

A person or organisation
receiving payment for goods,
services or donations.

Payee

Note: Person to person payments and charitable or community organisation receiving donations can be in both categories



KAIHOKO | CONSUMERS.



Consumer Key Insights

- Most transactions are already **electronic** but there is **low innovation** in digital payments. **Not all consumers are able to pay** using their preferred method - contactless*
- There is no ubiquitous instant electronic peer to peer settlement so consumers rely on cash or bank transfers. However, transactional cash use is declining
- Some members of society are not well served by existing financial sector and rely on cash for their everyday transactions
- There are barriers to digital inclusion which impact choice and these are complex to address
- People have stated that **privacy is important** (CBDC summary of submissions 2022)
- Supply side matters for adoption like cash, **people cannot use a CBDC if supply is not ubiquitous** (must be accessible). Money systems rely on network effect



What do we want to find out?



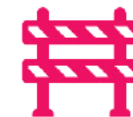
Features

- What money and payment features do consumers value the most and can they be provided by a CBDC?
- What attitudes and feelings do consumers have toward the different money and payment features?
- What are consumer's unmet money and payment needs and can they be provided by a CBDC?
- Are digital gifts / koha etc. as meaningful as physical cash?



Adoption

- What are the key adoption drivers, and for which consumers?
- Who influences them, and how so?
- What is minimum privacy / trust / confidence needed by consumers to adopt?



Barriers & support

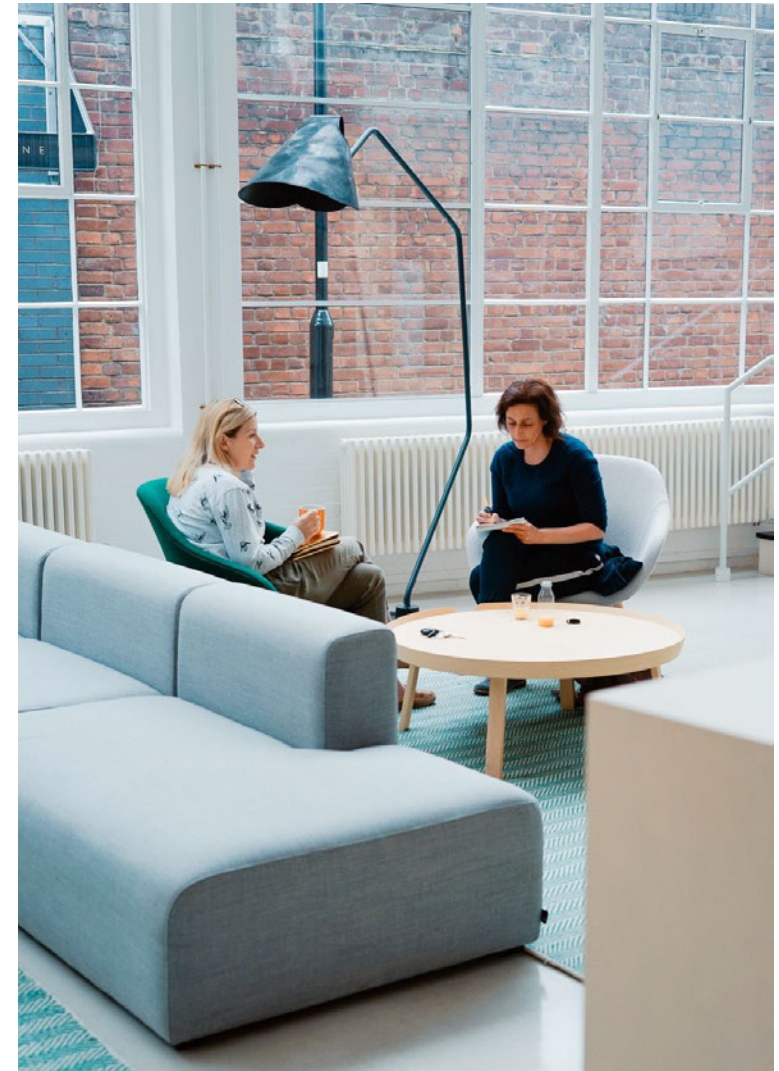
- What are the key barriers to a central bank issued, or new digital form of money, and for whom?
- What support is needed for consumers to adopt and trust a central bank issued or new digital form of money?





Assumptions that we want to test

- People will **adopt new payment** methods and money technology if it is **fast, convenient, easy to use** and better than current methods
- Digital payment methods may **struggle** to provide the same **perceived privacy and security benefits** as cash for some people
- People who have digital skills and autonomy will likely adopt CBDC before people who are digitally excluded because the former has the capacity to adopt a new method of payment
- **Attitudes are highly variable** between groups when thinking **about willingness to adopt new methods**





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WHAKAHOKI KŌRERO | FEEDBACK.

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NGĀ KAIHOKOHOKO | MERCHANTS.

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Merchants Key Insights

- **Location and community** influences a merchant's attitude toward offering and accepting cash
- Merchant desire for offering better payment services is influenced by **whether the method is easy and convenient** to adopt as well as consumer demand
- Some groups will **continue to prefer cash** as payment over CBDC for various reasons
- Merchants have **varying levels of resources and capability to adopt CBDC** across their businesses according to the size of their business
- Merchants are **concerned about safety and risk** but these concerns differ depending on their circumstances and business size
- Some merchants have **declining access to bank and cash services**.
Location influences this such as rural areas and the availability of ATMs to deposit and withdraw cash from





What do we want to find out?



Features

- What features of electronic payments are important to businesses?
- What are merchants' unmet needs in relation to accepting and managing payments methods and how might a CBDC fulfil these?



Adoption

- What are the key considerations and drivers for (and potential barriers to) accepting a CBDC as a form of payment?
- How integrated must a CBDC be with existing POS terminals or ecommerce gateways?
- What is minimum privacy / trust / confidence needed by merchants to adopt?



Social impacts

- How cost sensitive are not-for-profits, micro businesses and small business in relation to payment services?



Assumptions that we want to test

- Across all types of businesses there is a **demand for payment services with better features and at an affordable price** to meet their needs and support their business models and/or vision
- But their ability to introduce new payment methods may be **constrained by access to resources** (including capital, people, software or technologies)





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WHAKAHOKI KŌRERO | FEEDBACK.

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Next steps – Market Research

- Engage providers/build relationship
- Complete market research
- Playback findings
- Apply findings to relevant policy development and CBDC design



Item 6: Member-led session

International dimensions

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Item 7: Open discussion

Item 8:
Tākai | Wrap up

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NGĀ MIHI.

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CBDC GLOBAL VIEW, LOCAL RETAIL PERSPECTIVE

s 9(2)(g)(i)

The Retail payments industry is being disrupted

Digital currencies will be a key driver

- In the coming years, the experience of making and receiving payments will be transformed
- Many innovations that are currently gaining traction will mature and converge to create opportunities.
- Regulation and innovation will drive change to new digital rails - ultimately introducing new models.



CBDC Global view – context is key

The challenge is different for developed and under developed

E-CNY

- Accelerate digitization of cash
- Reduce transactions costs

Digital Euro

- Create more competitive, innovative and resilient Euro payment system
- To protect monetary policy

Sweden E-Krona

- Deal with the decline of cash
- Increase efficiency of financial transactions

Bahamas

- Improve financial inclusion
- Reduce illegal economic activities. Strengthen AML

Eastern Caribbean union

- Modernise financial system –Increase financial inclusion

Nigeria – e-Naira

- Increase financial inclusion

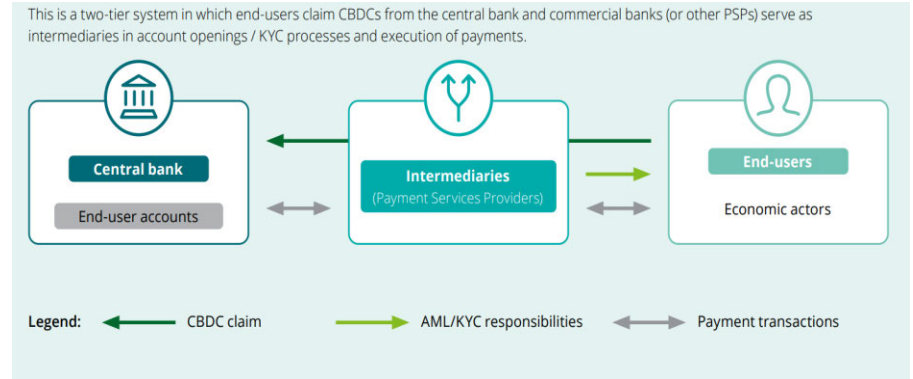
Most countries are choosing the Hybrid CBDC model

It enables competition and consumer reach

- Private sector is considered better positioned to deliver innovation and users experience
- Better model for reaching consumers to enable access and uptake
- Create “level playing field” to encourage competition and innovation

Examples”

- Mainland China has adopted a hybrid approach for the CBDC’ with the PBoC issuing digital yuan to commercial banks who distribute it to the public.
- The BoT plans to distribute by financial institutions, with conditions or limits for converting CBDC
- The Riksbank Bank tested e-wallets, distributed ledger technology and levels of interoperability, across participant banks.



Consumer and access is key to success

Chicken and egg problem

Consumers won't use it if it's not accepted everywhere. Merchants won't accept it if not enough people are using it.

Getting the payment instrument to consumers is a challenge.



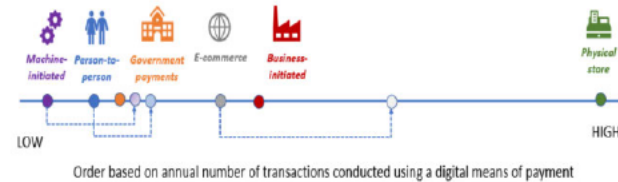
Enabling a CBDC payment to be accepted at the merchant is the next challenge.



Digital Euro use case examples

‘Does the use case target a relevant market segment that can support network effects?’

- Person to person
- Person to business – instore or online
- Business initiated
- Payments to government



NZ Retail context – Once we were world leading

What can we learn from looking back?

It worked for everyone

- It was free for consumers
- Merchants could accept all cards
- Banks could remove cash handling

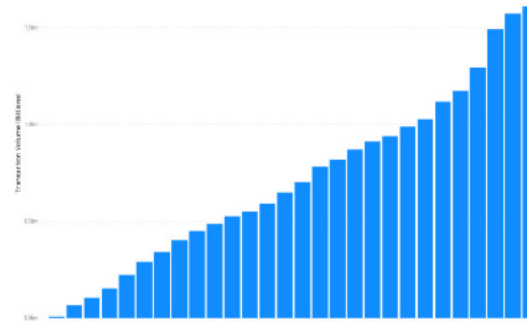
Easy access,

- Cards are easy
- Terminals were everywhere

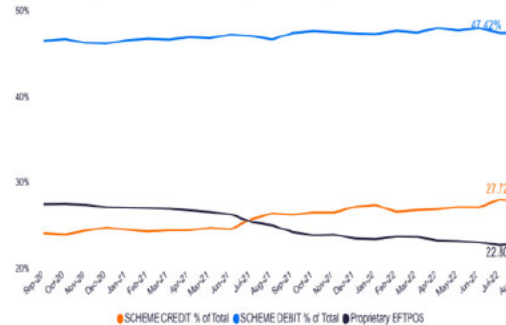
Utility model

- Shared infrastructure ownership
- Open commercial access to all
- Scale and low cost
- Network effect

Paymark Transaction Volume by Year



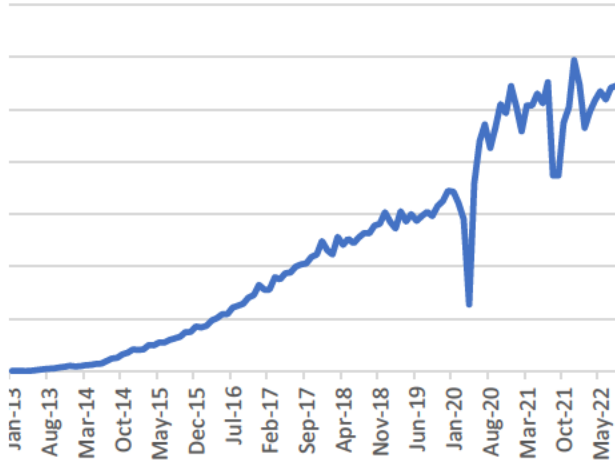
Transaction Type % of Total Transactions (last 24 months)



NZ Payments experiments

The challenge in a subscale market

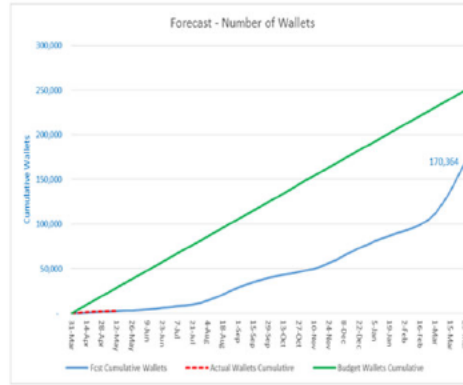
Contactless



It takes time

- Introduced 15 years ago
- Wider cardholder technology acceptance
- Covid19 impact – cardholders limiting touch points instore
- Contactless limit increase - \$80 to \$150

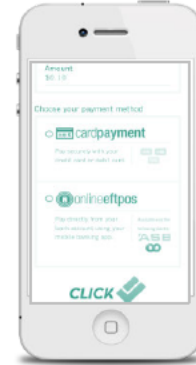
Semble wallet



Take too Long and technology can overtake you

- Limited to Android only
- Not all banks on board
- Technology choice
- Time to deliver was too long

Online EFTPOS



It's expensive and takes time to go it alone

- Online, NZ only
- Mobile experience
- Chicken and egg challenge
- Needed three banks to get scale
- Distinct technical integrations

Conclusion

How do we make the NZ CBDC world leading again?

Take the context into account.

Pick a use case that is going to have network effects

CBDC has to be better than plastic and different to other payment options

It needs to be everywhere Kiwis are

Incentivise participation and ongoing innovation

Has to be open and accessible to all, low cost, easy to integrate



All redactions on this page s 9(2)(g)(i)

Summary

Subject	CBDC Forum
Meeting Date	28 September 2022
Meeting Time	10:00am
Venue	PowerFinance and Microsoft Teams
Attendees	Members: Adrian Smith, Alexandra Sims, Andrew Dodd, Conrad Morgan, David Corbett, Fran Strajnar, Jane Retimana, Jennifer Ferreira, Joanne Dacombe, Michelle Kitney, Mitchell Pham, Paul Quickenden, Simon Jensen. Temporary Members: David Ison, Edwin Budding. Reserve Bank: Amber Wadsworth, Bella Di Mattina-Beven, Kate Johnson, Kosta Hahladakis, Makoto Seta, Robbie Taylor, Samuel Kirk-Reeve, Tim Duston.
Apologies	Brian Bonar, John Warwick, Steve Mander.

1. Welcome & update from the Reserve Bank

Robbie welcomed members to the second meeting of the CBDC Forum and thanked Dave Corbett and his team for hosting the group at his Auckland office. He noted that Edwin Budding (BNZ) and David Ison (Foodstuffs) were substitutes for Steve Mander (BNZ) and John Warwick (Foodstuffs), respectively, at this meeting, while Andrew Dodd (ASB) has joined the group as a permanent member. Members then took turns introducing themselves to the Forum.

Robbie then provided an update on the Reserve Bank's CBDC work programme for stage two, stakeholder engagement, and drivers of a CBDC.

2. Starter exercise – where do you sit?

The starter exercise involved members considering where they sit on adoption curves for various kinds of technologies, including electric cars, social media, Apple / Google Pay and wearables.

At the conclusion of the exercise, members considered where they might rate themselves for adoption of a CBDC. A common point by some members was that this would depend significantly on the design of the CBDC, and it would be difficult to place themselves on the adoption distribution without knowing those design choices in advance.

3. Member-led session: What is the size of the prize?

s 9(2)(g)(i) introduced s 9(2) session on assessing the 'size of the prize' of a potential CBDC. The members then collated their views into a list of potential upsides and avoided downsides (i.e.

All redactions on this page s 9(2)(g)(i)

'value-add' areas) associated with a New Zealand retail CBDC, and to 'T-shirt size' the potential size of each value-add area.

Members were first asked to add sticky notes with specific value-add ideas related to six key impact areas, which included: Reserve Bank of New Zealand, Government, Māori and the Māori Economy, Financial Services, Domestic Economy, and Other. Members identified the value-add ideas outlined in Table 1 of the Appendix.

Members were then split into breakout groups to explore some value-add areas in more detail. The output from these breakout discussions is outlined in Table 2 of the Appendix.

After regrouping, s 9(2)(g)(i) outlined some s 9(2)(g)(i) observations from the in-person groups s 9(2)(g)(i) noted that there was disagreement on the size of the issue of monetary sovereignty – some groups thought it was small, while others thought it was XXL – and thought it was interesting to have such divergence. One member noted that it was important to have a domestic alternative payment system for continuity. They outlined, as an example, when Russia went into Crimea the whole payment system got cut off.

Another member provided an overview of what was discussed in the online breakout group. The first idea was on the impact of a CBDC on inbound tourism. Looking at this through a Te Ao Māori lens, tourism is a large driver of the Māori economy and cross-border payments is a key enabler. The second idea was around smart payments – for example, utilising smart contracts for land sales.

4. Privacy playback & update from the first meeting

Following on from the CBDC issues paper submissions, Bella outlined that the team has been doing a lot of work on privacy and CBDC. The purpose of this presentation was to report back on the discussion of privacy in the last CBDC forum session and set out some key findings and suggested policy approaches for privacy in CBDCs.

Bella presented her high-level findings in relation to privacy and CBDC. See meeting slides. Bella then provided an opportunity for members to provide comments and feedback on this work.

One member noted the importance of alignment with digital identity and consumer data right work programmes, as the privacy concerns are similar. Robbie noted the work programmes were different but there were lessons about how to address privacy concerns. Bella noted that providing choice about engaging with these programs to users is important for user trust.

Another member noted a recent issue where the Police falsely alleged that a car was stolen, in order to access data. They noted that there had not been more consequences and that this was eroding trust in government more generally.

One member noted that policy misuse is a growing threat and that this can be solved by solution design – i.e. baking it into the design. For example, not being able to block someone from spending a CBDC in certain industries. Another member noted that blockchain can prevent misuse of a CBDC.

Another member noted that there are aspects of privacy related to the currency itself, but also to the whole network. Everyone will want innovation, but that might come at the risk of eroding

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privacy and user consent. As a Forum, we will need to think about the implications right down through the network and make sure that it is carried through with the merchant.

Key takeaways from the session were:

- Privacy has a range of different components. Data collection is one aspect but there are other elements of privacy which are important to support trust.
- Actions by one part of the government can impact on trust in another part.
- Technology can help address privacy and trust related issues.

5. User needs validation

Robbie introduced the session on understanding and validating our user needs. This would inform further research the Reserve Bank planned to commission.

Amber presented the insights on consumers – people or organisations paying for goods, services or donating.

One member noted that hardware, fees to merchants and surcharges on consumers are the biggest barriers to people wanting more convenient payment methods, such as contactless payments. The member also noted that the setup of a new payment method needs to be easy – if it cannot be done by someone with minimal tech skills in a few minutes, then it is too hard.

One member noted that the effect of the Retail Payment System Act should be considered, as the legislation is pervasive across all payments. Two stakeholders also noted they had done work on use cases around availability of payments and have some material that they could share.

Another member questioned how this applied to disability and internet accessibility – if they don't have access then what will they be left with? Disabled people find contactless convenient, but not at an extra cost. They also advocated for accessibility to be considered at the beginning of the process (e.g. people that are blind or with low vision).

One member noted that for merchants there is also the cost of hardware and whether it is tied into software. They also noted that one of the unique features of dealing online is that merchants sometimes don't know the cost of what is being purchased at the time (e.g. products with a variable weight).

Lastly, one member stated that a CBDC isn't really about payments – it's about what it enables. They believed that New Zealand already has a good payment system and questioned the focus on consumer research. There is a lot of value in considering what a CBDC might do to financial services and products and what might be enabled (e.g. transforming access to capital or removing climate change impacts from various supply chains) and those second order impacts might not be captured in the way the research is currently framed.

Makoto presented the insights on merchants – people or organisations receiving payment for goods, services, or donations.

One member observed that there is a one-to-one relationship underlying this research. Their research is focused more at the level of social practices behind money use and how people attach

social meanings to use of money and payments, which takes you into group or collective experiences. They outlined that this could be an area to explore i.e. at a social level.

Another member noted that, for merchants, it might be valuable to understand the relative importance of innovation and cost. Some merchants say that they like free payment methods, but also don't like if there is no innovation on it.

A member outlined that they are seeing more merchants passing on costs where they live – even for debit cards – and that can be impactful for small towns. Therefore, the cost aspect needs to be thought about carefully.

One member noted that it would be difficult to ask people something they know nothing about and that any further research needs to be carefully designed in light of this.

6. Member-led session: International dimensions

s 9(2)(g)(i) introduced s 9(2)(g)(i) session which provided an overview of CBDCs globally and from a local retail perspective. s 9(2)(g)(i) presentation covered how the retail payments industry is being disrupted and an overview of existing CBDC projects overseas. s 9(2)(g)(i) also covered the reasons for why many countries are choosing the hybrid CBDC model, how consumer and access is the key for success, and the context with New Zealand's retail landscape.

s 9(2)(g)(i) outlined what s 9(2)(g)(i) believed are the key points for ensuring that a New Zealand CBDC is successful. These included: taking the context into account, picking a use case that is going to have network effects, incentivising participation and ongoing innovation, and ensuring that it is open and accessible to all.

Members were asked to keep their comments and discussion for the subsequent open discussion agenda item.

7. Open discussion

To open the discussion, one member noted that we need to find a way where a CBDC is accepted everywhere. That is the challenge – how do you get every device to accept it? Another member noted that they have a cold wallet and can freely trade with other wallets. The attraction with DLT is that the infrastructure already exists – CBDC could be a unit of account on a selected chain. Therefore, we might not need to create our own DLT.

One member noted that an alternative is that the infrastructure isn't replaced. Instead, what if there was a handshake between the infrastructures? Better financial products could be built faster on a CBDC – and a handshake through to existing payment systems for the 'last mile' might be a good halfway house before significant infrastructure changes are rolled out. Another member added that there are many different approaches. One option is to build the platform that others innovate on top of.

Responding to a point raised by another member, Robbie clarified that the RBNZ was following international work on use of CBDCs for cross-border transactions but was not actively engaged at this point in time.

Makoto asked the Forum if they had any thoughts on how New Zealand would evolve in respect to data protection – is it an asset that needs to be protected? One member noted that it is difficult

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to monetise data – people expect it for free. Another member said that their research into consumers and data told them clearly that consumers think their data is important and valuable and expect it to be protected as well as their money. Additionally, in an open banking environment, consumers will have the opportunity to monetise their own data.

One member noted that they find it odd that people act differently to what they say in relation to their data. For example, people say they value privacy but are happy to share their data with large technology companies. Value switching behaviour is also an important consideration – to change an existing behaviour, the product needs to be nine times better than the previous.

A member also created an illustration to share their thinking on a framework that didn't break privacy or data integrity. They noted that public blockchains can work alongside existing systems without getting rid of them – and example of the handshake discussed previously.

8. Wrap up

Robbie concluded the meeting by thanking Dave and the rest of his team for hosting the Forum in Auckland. He also thanked those attending online for joining. The next meeting is tentatively scheduled for the third week of November, and we will come and out get feedback from members in the next few days.

Robbie asked members about what items they would like to cover at the next session. Suggestions included:

- Possible DLT models for a CBDC – what it is and what it can enable.
- Overview of how different digital economy initiatives (e.g. CDR, digital identity) fit together with CBDC from a macro perspective.
- Regulatory settings and new law – technical questions that might inform the design of a CBDC.

Lastly, the Forum discussed membership and noted that it was the intention that the Forum would expand to better represent relevant stakeholder groups.

Appendix

Table 1: Identified Value-Add Areas by CBDC Forum Members

Impact Area	Value-Add Idea (Upsides and Downsides)	
RBNZ	<ul style="list-style-type: none"> Transparency and accountability Control – prudential supervision and more regulation Drive innovation from commercial banks Value anchor Unite and empower citizens Further division and loss of trust 	<ul style="list-style-type: none"> Impacts on monetary sovereignty Transforming international payments Efficiency of the wholesale market and new market entry Creating a greater understanding of limits to innovation arising from AML issues
Government	<ul style="list-style-type: none"> More efficient benefit payments G2P payments with ease More coordination between different agencies are possible Reduce moral hazard via dependence on banks Broaden out to regional and global productivity Agency Potentially more moeny / profit in NZ 	<ul style="list-style-type: none"> Taxation efficiency Controlling the way benefits can be used by controlling where it can be used Taxation becomes controlled by smart contracts Government payments in CBDC could drive adoption Private sector instant settlement Reduce tax avoidance Supports Digital Aotearoa strategy
Māori and the Māori Economy	<ul style="list-style-type: none"> Greater choice in money and payments Cultural fit Mana motuhake Community empowerment Tino rangatiratanga Māori economy amplification Access to digital harware as a barrier to inclusivity 	<ul style="list-style-type: none"> Māori data sovereignty of transaction data Neo bank where profits fo to the Māori economy Potential micro loans based on data Offline access for those that don't have regular access to the internet Cross border transactions – tourism large driver of Māori economy
Financial Services	<ul style="list-style-type: none"> Means to pay in event of natural disaster Create ease of use in payments Liability shift to the RBNZ – create clarity and certainty Cheaper access to risk management 	<ul style="list-style-type: none"> Tiered privacy settings Smart payments (i.e. if / then events) Lower cost / risk remittances 24 hour peer-to-peer payments Smart contract property settlement

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Impact Area	Value-Add Idea (Upsides and Downsides)	
	Access to broader range of investments	Offline payments
	Provides choice for consumers	International forex and payments outside of the SWIFT system
	Enable more creative ways for charities to collect donations	Instant payments
	Stable asset for innovative	Accessing unbanked populations
	Network evolution – access	Facilitates open banking – more information and utility for consumers
	Stable asset for innovation	AML / CFT requirements baked in
	Lower cost payments and acceptance	
	A more durable payment instrument than private sector payment cards	Linking money to environmental and social impacts
	Cultural fit	Trade finance
	Simplified acceptance	Instant reconciliation
Domestic Economy	Mitigate cash handling risks and costs	Rounding up transactions for gifting and rewards
	Provide an alternative model for NZ businesses	Better liquidity through instant payments
	Decentralised autonomous organisations (DAOs)	Unbanked customers have access to financial services
	Conditional payments	
Other	Ease of use for consumer and choice	Address unmet consumer and merchant needs
	Data sovereignty	

Table 2: Exploring Value-Add Areas in Detail

Breakout Group 1	
Impact area	Reserve Bank of New Zealand
Value-add idea	Protection of monetary policy
Description	New central bank money – value anchor
T-shirt size of downside avoided	S, XL, XXL
T-shirt size of upside captured	S, XL
CBDC features that could enhance value	Back fiat currency with hard assets

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Breakout Group 1

Actions that could enhance value	Block usage of other CBDCs in domestic markets
How could we refine these estimates?	–

Breakout Group 2

Impact area	Government
Value-add idea	Streamline tax collection – reduce anonymous transactions
Description	–
T-shirt size of downside avoided	Large across NZ
T-shirt size of upside captured	Increased visibility of tax – leads to reduced crime Increased tax take – replace cash in markets Data with your transaction
CBDC features that could enhance value	
Actions that could enhance value	Make it easy to access (e.g. mobile)
How could we refine these estimates?	–

Breakout Group 3

Impact area	Government
Value-add idea	Potentially more money / profit in NZ
Description	Lower cost payment option domestically
T-shirt size of downside avoided	Less scheme fees offshore – moderate
T-shirt size of upside captured	Reinvestment of profit in business and innovation – leads to growth and employment for NZ
CBDC features that could enhance value	Simplicity and ease of use / processing Real time settlement of funds (i.e. instant)
Actions that could enhance value	Transparency and accountability

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Breakout Group 3

How could we refine these estimates?	Modelling
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Breakout Group 4

Impact area	Government
Value-add idea	Opportunity to provide user view to government strategy
Description	
T-shirt size of downside avoided	XS
T-shirt size of upside captured	M, XL
CBDC features that could enhance value	Must consider needs of offline users as well Solve for the digitally excluded
Actions that could enhance value	–
How could we refine these estimates?	–

Breakout Group 5

Impact area	Financial Services
Value-add idea	Facilitate 'open banking' so more information and utility for consumers
Description	
T-shirt size of downside avoided	–
T-shirt size of upside captured	Increased competition and consumer utility (e.g. atomic settlement – medium
CBDC features that could enhance value	–
Actions that could enhance value	–
How could we refine these estimates?	–

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Breakout Group 6

Impact area	Other
Value-add idea	Consumer needs
Description	More accessibility and utility
T-shirt size of downside avoided	–
T-shirt size of upside captured	XL
CBDC features that could enhance value	Programmability, fungibility, freely transfer, privacy, democratisation
Actions that could enhance value	Education, digital inclusion, internet accessibility, interoperability, integration
How could we refine these estimates?	Community engagement

Breakout Group 7

Impact area	Māori and the Māori Economy
Value-add idea	CBDC use in inbound tourism
Description	CBDC could deal with cross-border transactions – income from tourism is a big driver of the Māori economy
T-shirt size of downside avoided	How tourists buy e-NZD
T-shirt size of upside captured	Tourism dollar Aspirational long-term view: lifetime value – how do they keep long-term relationship with NZ
CBDC features that could enhance value	Smart contracts for discounts
Actions that could enhance value	Preloading eNZD before coming into the country Federate AML / KYC to streamline the process
How could we refine these estimates?	–