Submission by

BLOCKCHAIN NZ

to the

Reserve Bank of New Zealand

on the

The Future of Money

Central Bank Digital Currency Issues Paper

6 December 2021

TECH ALLIANCE

BLOCKCHAIN NZ

The Future of Money – Central Bank Digital Currency – Issues Paper

Introduction

1. BlockchainNZ is a member of the New Zealand Tech Alliance (**NZTech**). NZTech is a group of independent technology associations from across New Zealand that work together with a common purpose to connect, promote and advance technology ecosystems and to help the New Zealand economy grow to create a prosperous digital nation.[1]

2. BlockchainNZ is an association of organisations and individuals that represent the rapidly emerging business sectors being built using blockchain technology. These business sectors encompass IT, trade and supply chains, financial services, and the public sector, to name a few. [2] BlockchainNZ has taken a key role in growing our country's capability to maximise the opportunities enabled by blockchain technology and address any challenges.[3]

3. We present this submission to the Reserve Bank of New Zealand (**RBNZ**) in respect of the RBNZ's consultation on its issues paper on the Future of Money – Central Bank Digital Currency **(issues paper**).[4] Headings in this submission and their numbering relate to the particular questions raised in the issues paper and page numbers refer to page numbers of the issues paper.

Do you agree with the motivations for the Reserve Bank considering a CBDC, as set out in Section 3?

4. The two trends the RBNZ gives for motivating its exploration of CBDCs are first the declining use of case and second the rise of other forms of money, particularly large technology companies proposing to issue stablecoins. As to the first issue, the declining use of cash. We agree that the use of cash in New Zealand as a means of payment is declining. As the issues paper notes on page 14, in 2020 only nine percent of New Zealanders preferred to use cash as their main payment method, which was a reduction from 12 percent in 2019. The reasons for the declining use of cash are varied and include the fact that cash is becoming harder to obtain and use. Much of the drop in the use of cash is due to the rising rates of payments by eft-pos, credit and debit cards (page 13). In addition, the rise in online shopping is reducing cash usage as it is not normally possible to pay via cash for online purchases, unless click and collect is used.

[1] https://nztech.org.nz/about/.

[2] For a list of current members of BlockchainNZ, see https://blockchain.org.nz/about/our-members/.

[3] https://blockchain.org.nz/about/.

[4] https://www.rbnz.govt.nz/-/media/ReserveBank/Files/Publications/Policy-development/Banks/Future-of-Money/CBDC-issues-paper.pdf?revision=69fc9f64-5ba2-485e-95ce-83c06c810a44&la=en.

5. The second issue, global stablecoins (private stablecoins) issued by technology giants, such as Facebook (now Meta),[5] have the potential to transform payments if adopted. Meta has an extremely wide user base and would have good user functionality, not just for users but also for traders, thus it is likely that a substantial number of transactions could occur using such a stablecoin. It is understandable, therefore, that the RBNZ is considering releasing a CBDC to address this. RBNZ is not alone in exploring the creation and release of a CBDC. As the issues paper notes, over 80 percent of Central Banks around the world are researching on CBDCs, with over 50 percent engaging in experiments and proof of concepts for CBDCs.

Are there additional motivations that should be considered?

6. The use of cryptocurrencies in smart contracts, which allow for 'programmable money',[6] have not been expressly considered as a motivation for a CBDC. Smart contracts allow for conditions to be imposed on money and thus make the money programable. For example, a smart contract can be used to pay money automatically to specified organisations or people when conditions are met. Smart contracts therefore potentially reduce transaction costs, which would be beneficial to industry, Government and citizens alike. For example, the Government could, if it wished, easily provide a direct injection of cash to all holders of a CBDC account quickly - in the form of "helicopter money". Something that would be difficult currently. However, the utility and efficacy of smart contracts may not be fully realised if the payments are made by traditional payment rails, for example, through a credit card network or wire transfers.

7. People will begin to live more of their lives in the metaverse[7] and to require payments in the metaverse to be made via traditional payment rails makes little sense.

8. Private stablecoins are only one form of stablecoin. There are a range of decentralised stablecoins, including USD Coin,[8] Binance USD,[9] Tether[10] and Dai,[11] Terra USD[12] and True USD.[13] Stablecoins are designed to overcome the limitation of the volatility of the price of Bitcoin and other cryptocurrencies.[14] Stablecoins are growing rapidly, from a market cap in 2020 of US$20 billion to US$139 billion in late 2021.[15]

9. In addition to the decentralised stablecoins, there are, of course, decentralised cryptocurrencies, with include bitcoin and ether. Decentralised stablecoins have evolved in the last decade from a nascent technology into an asset class with a market capitalisation of

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[5] https://www.diem.com/en-us/.

[6] https://www.forbes.com/sites/sap/2021/03/25/as-programmable-money-emerges--central-banks-ramp-up-for--tokenized-economy/?sh=745a4529c402.

[7] https://www.thebigg.org/2021/11/03/what-is-the-metaverse/.

[8] https://www.circle.com/en/usdc.

[9] https://www.binance.com/en/busd.

[10] https://tether.to/.

[11] https://makerdao.com/en/.

[12] https://www.terra.money/.

[13] https://www.trueusd.com/.

[14] https://www.oreilly.com/content/stablecoins-solving-the-cryptocurrency-volatility-crisis/.

[15] https://theconversation.com/stablecoins-these-cryptocurrencies-threaten-the-financial-system-but-no-one-is-getting-to-grips-with-them-171690.

approximately US$2.09 trillion, as of 29 August 2021.[16] Millennials[17] and Generation Z[18] appear to be the main adopters of cryptocurrencies as a form of investment and a form of payment for goods and services. It would be natural to expect the adoption of cryptocurrencies to increase as more Generation Z members begin working and investing. Cryptocurrencies appear to be one natural partner to e-commerce, which is growing more important to the economy and will also be used in the metaverse.

10. The issues paper contains no express mention of open banking, which has the potential to benefit people and organisations.[19] Despite the potential benefits of open banking, New Zealanders and organisations have yet to see many examples of open banking due to the reluctance of commercial banks to embrace it. A CBDC would aid in the adoption and use of open banking in New Zealand.

11. As digitisation increases, so too does the production and capture of data and metadata. A New Zealand CBDC will provide extensive and potentially near real-time data and metadata. This data offers substantial insights on all aspects of a CBDC, including money flow. The World Economic Forum stated in a recent paper on digital currencies, "[i]nformation and knowledge-sharing, from low level transaction data that can highlight potentially illicit activity to information about forthcoming policy changes, can be hugely constructive."[20] This data and its use cases, however, will have to be balanced against security and privacy issues.[21]

Do you agree that the scope of work should focus on a general-purpose CBDC (Section 3.2) in the first instance?

12. A general-purpose CBDC, which is available to any individual or business that chooses to use it, is preferable to a 'wholesale' CBDC that can be used only by large financial institutions. This is because the public and business would not see the full benefits of a wholesale CBDC. For example, people and businesses would still have the same issues obtaining and retaining a bank account as they currently do, and it is unlikely that a wholesale CBDC could be used easily in smart contracts.

Do you agree with the multi-step process for the development and implementation of a CBDC as outlined in Section 3.1 and illustrated in Figure 8?

13. It is prudent to design and test a CBDC and then perform the policy cost benefit analysis and engage in public consultation before any implementation of a CBDC.

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[16] https://coinmarketcap.com/.

[17] https://finance.yahoo.com/news/millennials-own-more-crypto-other-210017141.html.

[18] https://www.cnbc.com/2021/06/22/gen-z-investing-in-cryptocurrency -btc-eth-and-meme-stocks-amc-gme.html.

[19] https://umbrellarconnect.com/apps-infra/open-banking-is-coming-what-it-means-for-data-driven-businesses/.

[20] https://www3.weforum.org/docs/WEF_Digital_Currency_Governance_Consortium_White_Paper_Series_2021.pdf at page 33 [4.1].

[21] https://www.bis.org/publ/othp33.pdf.

Do you agree with the description of the opportunities presented through the implementation of a CBDC?

14. A CBDC would support the role of central bank money as a monetary value anchor that provides a digital alternative to privately issued money (money both issued by commercial banks in New Zealand, private stablecoins and decentralised stablecoins).

15. A CBDC like cash can be seen as a public good and thus it provides a fair and equal way to pay. As part of that, an appropriately designed and implemented CBDC may foster greater inclusion goals by addressing some of the financial and digital inclusion barriers that people face.

16. A CBDC could be a catalyst for innovation and competition in the money and payments ecosystem, for example, by enabling the use of a CBDC within smart contracts if all the parties to the contract receiving funds from the smart contract are located in New Zealand.

Are there any other opportunities that should be considered?

17. On page 19 the potential of RBNZ taking part in global initiatives that use CBDCs to improve cross border payments is raised. The ability to use a CBDC internationally is essential and not a nice to have. Payments are increasingly being made internationally. If a CBDC could be used only in New Zealand it would have limited utility and people and businesses are likely to seek out other payment forms such as private stablecoins and decentralised stablecoins.

Do you agree with the design principles that have been developed to capture the opportunities described in Section 4?

18. The design principles of uniform, universal, cash-like, innovative, integrity, managed issuance are sound. In particular, the design principle of universal is vital as all households and businesses would be able to hold and use the CBDC. Currently not everyone has a bank account and a number of businesses in a range of industries are unable to secure bank accounts or if they do have bank accounts, they are debanked.[22] Providing businesses with CBDC accounts would be beneficial. For unbanked individuals their lives may be made easier and cheaper with access to a CBDC: it is precarious and expensive to live without a bank account.[23]

19. If the indirect model 1 of distribution, as outlined in the issues paper, is used, where intermediaries pass on CBDCs to end users, it is unlikely that the banks would provide all businesses and individuals with accounts. To ensure that banks provide businesses and individuals with accounts would require a law change and access to a transaction bank account would need to become a right of people and organisations.[24]

[22] https://www.nzherald.co.nz/business/businesses-denied-banking-services-as-banks-tighten-up-who-can-have-an-account/BB2NGQXAXQ62RMVRQ67YBBEXDM/.

[23] https://www.moneyunder30.com/what-does-life-look-like-without-a-bank-account.

[24] https://www.stuff.co.nz/business/money/107691077/christchurch-woman-lobbies-to-make-it-a-human-right-to-have-a-bank-account

Are there other design principles to capture the opportunities that should be considered?

20. At a more micro level, to avoid the possibility of a flight of money from deposits in private banks to a CBDC, it would be prudent for the CBDC not to pay interest.

Do you agree with the description of the challenges and risks in Section 5?

21. Cyber security is a risk; however, commercial banks currently face that risk, thus it is not unsurmountable.

22. The potential impact of a CBDC on commercial bank transaction accounts is a potential risk. As the issues paper identifies on page 27, there may be a run on the banks as commercial banks may lose some deposits as households transfer their deposits in commercial banks to the CBDC accounts. Second, because the CBDC would act as a competitor to commercial banks in terms of deposits and transactions (and thus the fees that banks generate from these transactions), this may reduce commercial banks' profitability and therefore reduce the resiliency of commercial banks to economic downturns.[25]

23. The potential impacts of a CBDC can be mitigated by the CBDC accounts not providing interest, or as noted on page 29, the RBNZ could impose negative interest rates on large holdings of CBDC, thus replicating the storage costs of cash as well as inflation effects. In addition, the introduction of a CBDC should act as a spur to commercial banks to improve their offerings.

24. Even without the introduction of a CBDC the large established commercial banks are likely to see a continued move away from money being held in deposit accounts. This is because New Zealand is likely to see the growth of challenger or neo banks that has been seen in the UK[26] and Australia.[27]

25. It is questioned whether the goals of inclusion will be met with a CBDC, especially with the unbanked. How would a person obtain a CBDC without providing requisite documentation? The lack of documentation is currently one reason why people do not have bank accounts. The effect of a lack of documentation is being seen currently with the roll out of vaccine certificates in New Zealand. Many people are struggling to obtain their certificates. One way to achieve more inclusion would be to use a card with a chip that could be purchased with no registration.

26. The design challenges of creating a CBDC cannot be underestimated. To design a CBDC from scratch, which would be interoperable with other CBDCs, would be extremely complicated and time consuming. The RBNZ should consider an existing product/service or partnering with an existing provider.

[25] https://www.rbnz.govt.nz/-/media/reservebank/files/publications/bulletins/2018/2018jun81-07.pdf at pages 15-16.

[26] https://www.cityam.com/how-challenger-banks-are-revolutionising-the-sector/

[27] https://www.acuitymag.com/finance/the-digital-neobanks-ripe-for-new-money.

Are there other challenges and risks that should be considered?

27. The issues paper raises the issue of people unable to access a CBDC if they do not have internet coverage or do not have a relevant device and/or data plan (page 22). We have seen with the Covid Tracer app and the vaccine certificates, for example, that a number of people do not have smart phones or similar devices. In addition, a CBDC must be resilient in the case of internet outages. One possibility for building in resilience is to use tamper-resistant hardware (possibly a card), where the token or account balances are stored in chips.[28] The downside of such a system is that the loss of the hardware means the loss of the money.

28. Unencumbered or special supervision or censorship powers by the Government in a CBDC environment should be scrutinised and ideally not permitted.

Do you agree with the design principles that have been developed to harness the opportunities and to address the challenges described in Sections 5 and 6 respectively?

29. CBDCs raise considerable privacy concerns.[29] While the issues paper touches on privacy concerns at pages 23 -24, the design principles do not give sufficient indication of how they will be addressed.

Are there other design principles that should be considered in respect of the opportunities and challenges described in Sections 5 and 6 respectively?

30. We have no comment at this stage on this question.

Additional comments on the RBNZ's views expressed in the issues paper, the issues canvased, and the direction of further worked signalled in the issues paper.

31. Many people do not realise that the money in their bank accounts is privately issued money and that only cash is issued by the RBNZ, more education is required of the general public.

32. It is unlikely that a single version of a CBDC can satisfy all the competing requirements for a CBDC as outlined in the issues paper, in which case it does not do anything well. It may be prudent to concentrate on doing one or two things and facilitate the use of other payment mechanisms to meet other requirements. For example, the use of a CBDC in a smart contract will likely only be useful where all the parties are located within New Zealand. To achieve full functionality and benefits from the use of smart contracts, a private or decentralised stablecoin would be the better alternative.

Alex Sims, David Bosman, Shahid Saiyad, Alison Mackie and Bryan Ventura (Chair), on behalf of the BlockchainNZ Executive Council

[28] https://www.slideshare.net/15Mb/drivers-for-cbdc-and-implications-for-architecture.

[29] https://lthj.qut.edu.au/article/view/1745.