18th April 2023

**Response to the survey connected to the Bank of England's 'The digital pound: Technology Working Paper' of February 2023**

*Summary*

We responded to the survey attached to the Technology Working Paper for the 'Britcoin' CBDC project. The Working Paper has little content about technology: it is mainly a series of functional requirements. In a number of cases the respondents are asked to submit their ideas, in the absence of ideas from the 'working' group. What have they been doing all this time?

The Technology Working Paper is a really shoddy and second-rate piece of work, unworthy of the importance of the project to the nation.

The charts show a business model remarkably like the one for card payments now. Could this be because there is a major opportunity for players in the card payments ecosystem to enclose in their deductions-from-face-grabbing business model those payments that are made by cash and cheque now, where the whole value passes from buyer to seller?

As for any hope that CBDC will be done in the UK without restricting users' privacy and anonymity, the paper disposes of it, whilst repeatedly claiming it does not.

It also denies there will be programmability – which means building in the ability for authorities somewhere down the line to manipulate users' behaviour by rewarding it with a credit of CBDC or punishing it with a debit – whilst including a fat box entitled 'Programmability' in the system map.

The paper repeatedly inserts redundant qualifications along the lines of 'it could work like this…if a decision were taken to implement CBDC…which it hasn't': HM Treasury and the Bank of England are hiring a 30-strong 'Britcoin' development unit. They have already decided to go ahead. It will work as laid out, reducing privacy and anonymity, and it will be paid for via deductions-from-face-value on sales proceeds, which are passed back by merchants to their customers in the form of higher prices – which has the technological name 'price inflation'.

*Qu1: Do you agree that these six considerations are foundational technology considerations for CBDC? Are there additional or alternative technology considerations that the Bank should be focused on? (Section 3)*

No, these are functional considerations. They are not technology considerations at all. Technology considerations would involve the description of technology options and which ones addressed the required functions, how, how exactly, and in what ways they did not. As such the Working Paper is wrongly titled, as is this survey. There is very little about technology in the material.

*Qu 2: Which privacy-enhancing technologies, or other privacy mechanisms, might support the proposed policy objectives, and how might they be used? (Section 3.1)*

The Working Paper ought to set out what is available now, with an analysis of how each works, features, strong points, weak points, difficulty and materiality of the gaps. Respondents should be asked to state whether they agree with that analysis, not do their own.

*Qu 3: Are the provisional requirements and metrics discussed in the paper, particularly for uptime, transaction throughput and transaction speed, realistic and appropriate? (Sections 3.3 and 3.4)*

Once again it should be for the project working group to lay out why the requirements and metrics are appropriate, by supplying supporting evidence and comparisons with other payment systems. However, in case there is any doubt, a retail CBDC must replicate the performance of cash: 24/7 with six-nines availability, and with instant response times for the entirety of possible messages, including for giving change. The Swedish e-krona project has shown that it takes a long time for an application to examine the seller's wallet compared to the buyer's wallet, and work out what to take from each and exchange them in the right order.

*Qu 4: Are there other significant components or activities that the Bank should consider in designing a CBDC? (Section 4)*

There should not be any possibility in the model for the seller not to receive 100% of the value of the sale from the buyer. There must be no 'interchange' or other fees taken off the sales proceeds by payment intermediaries. That model, which is the prevailing one in the cards world, cannot be permitted to take over the replacement for physical cash.

It must be 100% assured that the beneficiary of a CBDC payment is a genuine actor and not a scammer: there can be no Authorized Push Payment Fraud in CBDC in the way it has been allowed to permeate online and fintech payments. If avoiding APPF compromises the privacy and anonymity of the beneficiary, then CBDC is a no-go.

*Qu 5: Are there alternative models that might better address the technology considerations and technical requirements outlined in this paper? (Section 4)*

It is the work of the Technology Forum to unearth, examine and evaluate all alternative models. The posing of this question reveals a key weakness in the process: there has been no comprehensive review of alternative models and a thorough process to evaluate them. It is worth also re-stating that the 'Technology' Working Paper contains functional, not technology, considerations, and functional, not technical, requirements.

*Qu 6: Other than those described in this paper, are there additional important factors to consider related to ledger design? (Section 4.1)*

There should be no role for intermediaries - PIPs and ESIPs - between the user and the Bank of England: that enables them to take a deduction-from-face-value. As CBDC has no physical form, there is no need for the agents that play a role in distributing, banking and replacing physical cash:

ATMs, security transport companies, bank counters, banking hubs, the Cheque & Credit Clearing System, and so on. The user can have a direct relationship with the Bank of England but if the Bank of England does not want this, then the project is a no-go. It cannot be permitted that a value-swallowing ecosystem grow up around CBDC.

The paper in one place denies that there will be programmability and yet programmability has a box in the chart, and a limited description of what it means.

*Qu 7: What are the most appropriate approaches or technologies for collecting and analysing aggregate transaction data? (Section 4.2)*

Again, it should have been the role of the Technology Forum to lay out the alternatives, advantages and drawbacks. However, the posing of this question sidesteps a key point around privacy and anonymity: at what point does personalised data become aggregated, and who can see the personalised data? In order to preserve the anonymity of cash, it has to be possible for the user to load up a device with value - as they would withdraw cash from an ATM - and then enjoy complete anonymity from the issuer of the value - the Bank of England - as to how they have spent it. CBDC does not deliver this key value point for the user and so the project is a no-go. The most appropriate approach is that neither the personalised nor aggregate data on how CBDC is spent is available to anyone apart from the user. All that the payment ecosystem should be able to see is what they see now regarding physical cash: the date, amount and location of a withdrawal.

*Qu 8: Do you agree with the need for aliases (both well-known and disposable)? If so, should the alias service be hosted as part of the Bank-managed infrastructure, or should it be distributed across the CBDC ecosystem? (Section 4.3)*

Absolutely not. Aliases are an enabler of Authorized Push Payment Fraud. It would be laughable, were this not so serious a matter, for the Technology Forum to suggest that there could be aliases of any kind, so it should not exist, and therefore it should neither be managed by the Bank of England nor distributed across the ecosystem.

*Qu 9: What features would a CBDC API require to enable innovative use cases? (Section 4.4)*

This is a functional question, not a technical one. It has no place in a consultation of this kind. Physical cash is a very simple tool and works because, thanks to its simplicity, its applicability is universal. It works the same for the payer as for the receiver. If CBDC ever exists it needs also to be a simple tool, without 'innovative use cases' which would involve functionality for either the payer or the receiver, enabled for them by the PIP or ESIP they happen to use. This undermines universality.

*Qu 10: Do you agree with the suggested list of devices for making payments with CBDC? (Section 4.5)*

Why is this a technology question? The answer is that CBDC should be able to be stored and used with any device then in circulation that is designed to enable value to be stored and used. In other words, the answer is self-evident, meaning the question has no value and should not have been posed.

*Qu 11: How viable is it to enable interoperability between CBDC and other forms of money using existing payments infrastructure? (Section 4.6)*

This is the wrong question. The question is what are the benefits and drawbacks of interoperability, and that is a political/functional question, and not a technology one. If this was a proper Technology Working Paper, it would lay out the options for interoperability to be achieved, ask for feedback, and state that the question of whether there ought to be interoperability or not is a political/functional one and not just a technology one.

*Qu 12: Is programmability and smart contract functionality an important feature of a CBDC system? If so, what is the best approach to enabling such functionality? (Section 4.7)*

No it is not. There should be no programmability or 'smart contract functionality. CBDC needs to be a very basic product, if it is to exist at all. The second part of the question falls away if the answer to the first part is negative.

*Qu 13: How important is offline functionality in a CBDC system? What are the most effective ways to implement offline capability? (Section 4.8)*

Offline functionality is unimportant. As a result the second part of the question falls away. CBDC, if it were to ever exist, needs to be online, 24x7, six-nines availability and able to conduct all the steps in its processes in real time. Otherwise it is a step backwards.

*Other observations*
The Working Paper is a very poor and shoddy effort. It has almost no content about technology. Several questions are about functionality, not technology. The British people have a right to expect better on a topic of this importance.

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