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Should CBDCs be renamed 'Collaborative' Bank Digital Currencies?

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There has been strong acceleration in the interest among central banks and governments in Central Bank Digital Currencies (CBDCs) in recent years. This has occurred in parallel with the adoption of private stablecoins by various regulated (e.g. USDC, GUSD) and unregulated (e.g. UST, DAI) providers. These CBDCs will need to adhere to the same 'fundamental market laws' as all other platform businesses that serve a two-sided market. Central banks and governments can learn from other two-sided markets, especially on the importance of collaboration, ecosystems and governance in getting adoption.

In recent stablecoin initiatives, ecosystem building has been an important driver to achieve adoption by payers and payees. That goal is achieved by being present in as many as possible transaction moments, such as exchanges, lending and payment services. And the use of open standards and governance is an essential element here.

Meanwhile, in the platform and Big Tech world, we see that the network effects are key, and that all platforms seek to build ecosystems in which they facilitate direct interactions and transactions between various actors. One of the early strategic questions for CBDCs should therefore be whether they will be 'the platform' or whether the CBDC infrastructure will be 'the network' of platforms.

Two archetypes: 'two-sided markets' platform model vs network model

'Platform thinking' has emerged as the leading paradigm over the past two decades of digital innovation in two-sided markets. A platform can be seen as the digital 'middleman' between two or more types of actors – such as payers and payees, social media users and advertisers, search engines and advertisers, drivers and riders, travellers and hosts, etc. Most of the platform business models are built around data collection, which enables matchmaking of supply and demand, as well as managing the transaction risk when two parties transact and use the platform to pay. As platforms have grown bigger, their market dominance has also grown because of the compounding network effects – a clear case of 'big is beautiful' and 'the winner takes it all'. Newcomers find it increasingly difficult to enter as the market matures, and if they become 'too' successful, the incumbents (e.g. Facebook, Google, Apple) simply buy them off the market. The dynamics around building network effects have recently been documented in a book called 'The Cold Start Problem' by Andrew Chen.

Similar dynamics are at play with payment platforms. A number of large payment platform players, such as Paypal, American Express and Alipay, operate according to the traditional platform principles. These are all very successful ventures that managed to solve the 'chicken and egg' problem. In the case of Paypal, for example, the company took a large gamble in its early years by initially giving every newly activated customer US$5 to spend with Paypal merchants. More customers meant more losses, but this bold move took Paypal beyond the tipping point. Meanwhile, Amex has focused its efforts on the global travel and leisure sector, which is now yielding handsome profits after many years of investment

The payment market has shown that a second paradigm is possible for digital innovation, namely the 'network model'. In this case, competing platforms cooperate to offer a unified service to the two types of end customers: the payer and payee. This is often referred to as the 3-party model (platform) and the 4-party model (network), as extensively described in the book 'Everything Transaction' by Chiel Liezenberg. This network paradigm evolved from when banks (which can essentially be regarded as platforms for payers and payees) decided to cooperate in the early days of credit cards. This saga is described in detail by Dee Hock in the book 'One from Many'. The cooperation between banks (each having their own payers and payees) was only possible after establishing a stack of coherent agreements on the functional, technical, legal, operational and business aspects. This set of agreements is often referred to as 'scheme', 'trust framework', 'soft infrastructure' or (in Dutch) 'afsprakenstelsel'.

Such a network model is only possible when formal (not-for-profit) governance is established including representation of the primary stakeholders. Mastercard and Visa are prime examples of such network models. Banks cashed in on their networks through Initial Private Offerings in 2006 and 2008 respectively, and since then these commercial publicly listed entities have been taking care of the governance and operation of the networks.

Another successful example of the network model is the telecommunications industry's GSM standard. Instead of having a handful of large telecom platforms, we now have a web of separate global providers which ensure their own interoperability, based on both business and regulatory incentives, to provide a seamless service worldwide. A major advantage of the network model is its built-in resilience and

decentralisation of data. There is no single point of failure. A key challenge with 4-party models is the distribution of the business incentives between the participating actors. In the beginning, the short-term investment costs are often with one group of participants (e.g. those issuing payment accounts) and the revenues with the other group (e.g. merchants). As adoption grows, the balance tilts to the other side. Four decades after launch and following many years of litigation by merchants who accused the credit card schemes of anti-competitive behaviour, the EU finally regulated the incentive distribution through its Interchange Fee Regulation in 2015.

CBDCs and the network model

Setting up a new payment network is not an easy task. Many EU payment initiatives (e.g. Monnet, EAPS and many other smaller, private, local initiatives) have been started, but failed. Failure is usually due to a mix of reasons, but one major inhibitor is the pre-existence of a functional solution. Without the prospect of a major improvement, innovation or cost reduction, the incentive for the public and merchants to migrate to something new is simply too low. Central banks must take this into account when embarking on new payment projects. Payment innovation is not a greenfield operation, so existing actors need to be closely involved in the project and its adoption – especially banks and merchant services providers, because they are used to dealing with the complexities involved in servicing hundreds of millions of payers and payees. This is not something that central banks are equipped for. Therefore, a collaborative and consultative approach for creation and governance is paramount.

Besides creating 'reach' on both sides of the market, the habits of the public and merchants need to change so that the CBDCs will be used. It is still not clear how CBDCs will be positioned towards the public and merchants. At one end of the spectrum is full replacement of today's payment infrastructure, and at the other end is the use of the CBDC as a back-up service, in case today's services fail. Positioning can change over time, but it is a long game.

PLATFORM, private governance

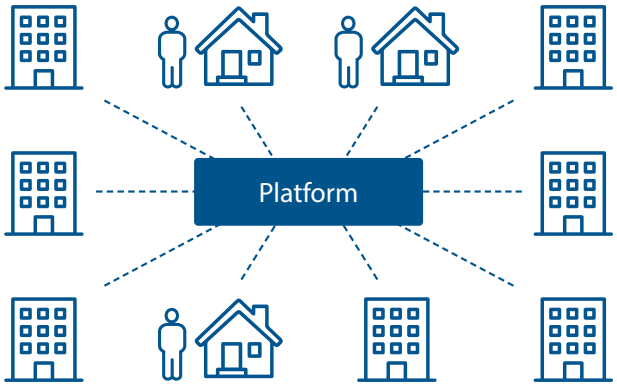

Figure 1 - Platform vs network models

NETWORK, set of agreements

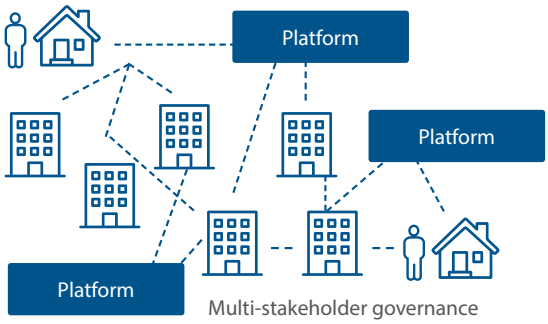

Figure 1 - Platform vs network models

Involve stakeholders in a collaborative process

In any scenario, it is of paramount importance to involve existing stakeholders in a collaborative process. Central banks can convene and lead the process, but important design choices will have to be made with the experts involved from the various ecosystem actors.

In such processes, we distinguish between primary and secondary stakeholders. Primary stakeholders are the ones dealing directly with payers and payees (i.e. providing services to them) such as retail banks (both incumbent and neo-banks), commercial banks and payment services providers. Secondary stakeholders include consumer interest groups, businesses and merchants, regulators and policymakers who have an influencing and communicative role in the whole endeavour.

There are two major angles to creating network effects for CBDCs: mandating and seduction. Only governments have the privilege of mandating adoption. Mandating can work with a bespoke use case, as shown by the widespread adoption of COVID digital certificates. Passports, driver's licenses and digital IDs are other examples of government-enforced adoption for all manner of worthwhile practical and security-related reasons. One scenario is that CBDCs will be used for relief funds, and that receivers will be mandated to use the CBDC app. Another, more adverse adoption scenario is the potential failure of the current bank system leading to a financial crisis. In such a case, funds may be moved to CBDC accounts, limiting the public's exposure. However, mandating alone will not work in the long run, certainly when the positioning of CBDCs will be broad, since network effects and relevance will remain limited. And with respect to the other side of the market (the merchants), collaboration with the existing acceptance ecosystem is needed.

Unlike governments, private parties only have seduction techniques at their disposal to stimulate adoption – mainly in the field of cost, performance and functionality. CBDCs are likely to have a low cost of operation as parts of the

network will be centralised. Also, the potential for CBDCs to be used as tokens (if designed this way) on new cross-border cryptographic networks will result in fast cross-border payments at very low cost. This is good for financial inclusion and money remittance. Another effective (yet expensive) way is to give away balance at download, similar to Paypal's original approach. In 2020, some experiments were conducted in China, which led to fast adoption.

Then there is the positioning against private stablecoins. The CBDC may be perceived as the 'hardest' form of fiat money, trading above its private alternatives which always have a private counterparty risk. This is particularly important when CBDCs will be seen as a 'store of value', which is one of the three functions of currencies. The other two functions are 'medium of exchange' and 'unit of account', and private stablecoins are mainly used for these two functions nowadays.

As always with large ecosystem projects, communication toward the public, merchants and all other primary and secondary stakeholders will be key. From the first day onwards, much attention must be paid to this. Experience has taught us that communication is always underestimated. The proper 'brain positioning' must be built up in order to position CBDCs in the already crowded world of payments, the payment infrastructure and the web of service providers. Special attention needs to be given to the privacy and programmability aspects of CBDCs, as these topics are of a highly sensitive political and emotional nature.

Conclusion

CBDCs are a two-sided market, just as any other platform businesses such as payment networks, social networks, telecommunications networks, home rentals and car sharing.

Designing network effects is key for successful adoption, so that adoption continues to gather momentum after the tipping point has been reached. Network effects can be stimulated by one-sided adoption subsidies, by attractive services and by mandating usage for certain applications, such as paying taxes.

The success of CBDCs will also strongly depend on the ability to integrate the current ecosystem of payment players who provide attractive services to payees (e.g. merchant connections and contracts) and payers (e.g. apps, cards). Not using existing infrastructure will make broad adoption more challenging, unless CBDCs will be positioned as a secondary alternative for the public.

Building an ecosystem can only succeed in a scalable fashion when standards are set, and these may not only be limited to the technical aspects. The functional, operational and legal aspects need to be tackled too, in a very similar way to how payments, identity and telecommunications are organised. Collaborative innovation, communication and implementation with the most relevant and 'lighthouse' stakeholders will be an essential ingredient for the success of CBDCs.

About INNOPAY

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We do this by delivering strategy, product development and implementation support in the domain of Digital Identity, Data Sharing and Payments. Our services capture the entire strategic and operational spectrum of our client's business, the technology they deploy, and the way they respond to local and international regulations.

We have grown from strength to strength since our foundation in 2002 and operate from our offices in Amsterdam and Frankfurt. Our head office is located in The Netherlands, where we have the #1 market position.

We are a founding member of Holland FinTech, a financial technology hub with links to the rest of Europe, the US, the Middle East and Asia. Our team consists of over 60 experienced domain experts who regularly advise a wide range of global organisations.

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