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# DCash: Motivations, Challenges, and Learnings From The First Monetary Union CBDC Pilot

In order to get a sense of the sheer importance of payment systems and settlement networks, and their intrinsic correlation to the fundamental well-being of national economies, one only needs to consult the memorable statement from Alan Greenspan, former Chair of the Federal Reserve:

"We had always thought that if you wanted to cripple the U.S. economy, you would take out the payment systems. Banks would be forced to fall back on inefficient physical transfer of money. Businesses would resort to barter and IOUs; the level of economic activity across the country would drop like a rock."[1]

And yet, despite their well-attested criticality, the history of payment processes has been blighted by immemorial inadequacies and imperfections. A 2006 whitepaper from Visa succinctly summarises the root cause of the problem as that there is no one single, ubiquitous global payment system; thereby resulting in an intrinsic inefficiency in cross-border and peer-to-peer payments.[2]

The launch of the Digital Eastern Caribbean Dollar, known in the region as DCash, was a significant, innovative and proactive step in the right direction towards addressing this problem taken by the oldest monetary union in the world, the Eastern Caribbean Currency Union (ECCU). Since the 1970s, Caribbean nations have discussed the implementation of financial tools that could enable efficient and cost-effective multilateral settlement and capital flows throughout the region.[3] Similarly, leaders of the Caribbean have long strived to implement a Caribbean Single Market and Economy (CSME), which is evident in the Revised Treaty of Chaguaramas, an ambitious document that sets the course for both the Caribbean Community (CARICOM), and the CSME. The mission has been kept alive by pioneering leaders like the Eastern Caribbean Central Bank (ECCB) Governor Timothy Antoine, who recently commented,

"We have a commitment, as governors, to look at the best way to support cross-border payments in the CARICOM area. The current reality, where we are trading in USD in the CARICOM area, is less than satisfactory, inefficient and expensive! Rest assured that that issue is occupying the attention of central bank governors in our region."

The inauguration of the DCash central bank digital currency (CBDC) pilot, in March 2021, represented the first major step towards the practical achievement of a CSME. To truly understand the scale of this achievement, it's necessary to examine some of the fundamental problems and consequences which arise from inefficient payment systems. In doing so, a light will be shed on the herculean efforts required to get to this point, and the pivotal justifications for why these efforts were well warranted.

1 Alan Greenspan, The Age of Turbulence, Penguin 2007

2 "The Inefficiencies of Cross-Border Payments: How Current Forces Are Shaping the Future", Yoon S. Park: http://euro.ecom.cmu.edu/resources/elibrary/epay/crossborder.pdf

3 See articles 42 and 44 of The Revised Treaty of Chaguaramas: https://caricom.org/documents/4906-revised_treaty-text.pdf

# The problem of payments

The importance of enabling capital to flow across borders in a frictionless manner cannot be overstated in a region that has been the victim of hefty transaction and exchange fees, largely due to the reliance on US and Canadian correspondent banks to clear USD transactions. USD acts as a bridge currency between most Caribbean currencies, which increases the complexity, cost, and latency in cross-currency transactions.

The implications of this can be prominently seen in the costs incurred when sending remittances. Data from Statista posits that in Q4 2020, the cost of sending a USD 200 remittance to LatAm and the Caribbean (LAC) equated to as much as 5.56% of the total value of the remittance itself.[4] For a region as reliant on remittances as the Caribbean, reducing the costs and barriers associated with the payment process is essential to fostering long-term economic growth and development. Taking Haiti — the Caribbean country most dependent on remittances — as an example, the World Bank noted that, in 2020, 23.2% of its entire GDP was derived from remittances.[5]

The high barriers to access plaguing the payments infrastructure in the Caribbean is part of a broader problem of financial access and inclusion that the region has continually struggled with. While almost all adults in the developed economies of Europe, North America and Australasia have a bank account, the World Bank's 2017 Findex database posits that 56% of the Caribbean population is unbanked.[6]

Access to a basic bank account has been shown to reduce poverty, as it promotes saving, allows access to credit, loans and investment opportunities, and promotes improved financial management. Indeed, out of 190 countries in the World Bank's 2019 Doing Business Report rankings on getting credit, the rankings for Organization of Eastern Caribbean States (OECS) countries range from 144th (Dominica and Grenada) to 161st (Antigua and Barbuda, St. Kitts and Nevis, St. Lucia, and St. Vincent and the Grenadines).[7]

The main factors that contribute to the lack of access to bank accounts are those pertaining to direct and indirect costs; including the costs associated with physically visiting a bank branch, and the fees associated with obtaining proper Know Your Customer (KYC) documentation, etc. In order to fully and effectively advance the agenda of financial inclusion, these contingent barriers must also be addressed.

4 https://www.statista.com/statistics/1020594/latin-america-cost-sending-200-us-dollars-remittances/
5 https://data.worldbank.org/indicator/BX.TRF.PWKR.DT.GD.ZS?locations=HT
6 https://globalfindex.worldbank.org/
7 https://publications.iadb.org/publications/english/document/Caribbean_Region_Quarterly_Bulletin_Volume_8_Issue_1_March_2019.pdf

# Enter DCash


By offering a digital payment solution that does not require users to have an account at a financial institution, DCash represents a significant step along the path of financial inclusion in the ECCU. Unbanked residents can access the network by setting up a wallet through an ECCB-authorized agent.

In addition, the DCash network provides vast improvements to the remittance process, by providing faster and cheaper transfers. According to data from the ECCB, outgoing regional wire transfers can cost anywhere between USD30-63 per transaction, and the final settlement of cheques, card payments and wire transfers, can take up to three days. In contrast, sending remittances via the DCash network can be achieved for free, during the pilot phase, with transaction costs planned to be the lowest in the region for the foreseeable future.

DCash also provides additional and enhanced security for users, compared to holding and transacting with physical cash, alongside robust data and privacy protection. The use of Hyperledger Fabric satisfies the need for a private, permissioned-based solution where all participants must be registered and existing Anti-Money Laundering and Combating the Financing of Terrorism (AML/CFT) protocols are strictly observed. Improved financial management is another value-added proposition of DCash, given the wallet application's reporting functionalities allow consumers to track and manage their expenditures. As more payment service providers integrate into the DCash network, unique value propositions and features will emerge in order to gain market share of transacting consumers throughout the region and beyond, following the BOE's thesis of the marketplace model.[8]

While improvements in transaction efficiency and cost can benefit stakeholders within the region, the introduction of a Caribbean CBDC paves the way for the previously envisioned regional multilateral settlement network, albeit with broader functionality than expected. Indeed, the Bank of International Settlements poses:

> "Cross-border CBDCs could offer the opportunity to start with a 'clean slate', and address the frictions inherent in current cross-border payment systems and arrangements from the outset. The enhancements could be made by offering secure settlement, reducing costly and lengthy intermediation chains throughout the payment process, and eliminating operating hour mismatches by being accessible 24/7."[9]

The Bitt team have long been spearheading the Caribbean Settlement Network,[10] which has more recently been acknowledged by the IADB.[11] Given that the two first CBDCs to market are within the Caribbean, perhaps the realization of connecting the Caribbean currencies for more efficient cross-currency transactions isn't far off.

[8] p. 25 https://www.bankofengland.co.uk/-/media/boe/files/paper/2020/central-bank-digital-currency-opportunities-challenges-and-design.pdf?la=en&hash=DFAD18646A77C00772AF1C5B18E63E71F68E4593

[9] p. 2 https://www.bis.org/publ/othp38.pdf - Central bank digital currencies for cross-border payments

[10] https://blog.bitt.com/caribbean-development-bank-hosts-launch-of-the-caribbean-settlement-networks-working-group/

[11] https://publications.iadb.org/en/caribbean-settlement-network-can-blockchain-ease-intra-regional-trade-caribbean

# Lessons learned from bringing a CBDC to market

When considering some of the challenges of launching a CBDC, it would be natural to assume that these primarily revolve around the technical aspects of the products, and the operational difficulties which arise from trying to instigate a new payment infrastructure. Indeed, challenges such as these are a big factor to be considered and do present serious hurdles to be overcome. Lack of internet connectivity, for example, presents a substantial barrier to access in some areas in the Caribbean; the region has only recently achieved a peak of 66% internet coverage.[12]

However, alongside these challenges, there are other, seemingly more subtle cultural, economic, and logistical go-to-market challenges that must be addressed in order to ensure a successful CBDC launch. Ranging from instinctive disinclinations from target demographics towards adopting new technologies, to the difficulties inherent in attempting to convey value propositions. In addition to the recent difficulties around physical interactions that COVID-19 have presented, there are a plethora of factors that the launch of DCash has taught us that central banks should be mindful of when attempting to launch a new CBDC. Taking experience from the stakeholders involved in early CBDC pilot projects could enable central banks to set-up themselves, and the CBDCs which they're attempting to launch, for success in their respective regions or target markets.

## Communication is key

The numerous value propositions of DCash are, of themselves, not enough to drive adoption. These propositions need to be tangibly and comprehensively conveyed to prospective users and target demographics. One of the biggest challenges faced by the ECCB in bringing DCash to market was the cultural disposition present within the ECCU to adopt new technologies (or, rather, to not adopt them). Residents of the region were initially disinclined to trial the system given that it presented a drastic divergence from the systems and the processes that have been used, in the case of other digital payment solutions, for generations, and in the case of physical money, for centuries. On this point, Chief Risk Officer of the ECCB, Sharmyn Powell, stated,

> "We also had to embark on an extensive education campaign that would dispel the notion that the digital EC currency is a cryptocurrency that carried with it the associated risks and uncertainties."[13]

Importantly, these cultural dispositions to new, emerging and frontier technologies aren't exclusive to the Caribbean. Central banks across a variety of economies need to factor this into their roll-out strategies when attempting to launch products, which, ultimately, are designed to make their payment processes more efficient and accessible. Providing users with clarity around the advantages can encourage them to think about the value of the product, thereby creating a demand for it, which may ultimately drive adoption and uptake.

The communication of value propositions to potential users is, on its own, insufficient to grow a payment network to the critical mass it requires to add tangible value to an economy. Certainly, many businesses have attempted to launch products or services that, in theory, could offer extensive value, but aren't successful in the market for a variety of reasons. Central banks are typically able to achieve adoption in the initiatives they roll-out because their client base is limited to the commercial banks that operate within their region, and these clients can be mandated, through legislation, to participate. When it comes to launching CBDCs however, central banks encounter the same problems that any other financial services company faces, when launching a new product, in terms of user acquisition and growing the usage of a particular platform.

[12] Cepal, p.57: https://www.cepal.org/sites/default/files/publication/files/46858/S2100269_en.pdf
[13] DCash Day Online Launch Event: https://www.youtube.com/watch?v=g9tFb6XSdNw&t=2s

## Leveraging local and industry expertise

Central banks historically have not had to develop go-to-market strategies, or manage marketing campaigns, as it would be superfluous to market an initiative for which uptake and adoption is a legal requirement. Therefore, working alongside dedicated, local teams of experts who have considerable experience bringing FinTech products to market will not only be incredibly beneficial to the roll-out of CBDCs, but will also be essential in ensuring that the network and associated applications are well-received and well-used by the target demographics. Drawing on domestic expertise to incorporate regional cultural messaging and tactics will be useful. However, gaining insight from experts involved in the roll-out of CBDCs in other jurisdictions can help ensure operating experience is leveraged, and successful behaviours are considered and adopted. It is therefore important to have a diverse team to help inform the roll-out strategy for a CBDC.

Central banks should also consider involving local payment service providers (PSPs) to participate in CBDC pilots. Having well-known payments applications integrate with a CBDC network could provide quicker adoption and easier onboarding for consumers who are already accustomed to sending and receiving money using a given PSP application. In some cases, the central bank will want to offer wallets to the market, but, in other cases, it may prove more expeditious to open up the CBDC network APIs, license a group of financial institutions and PSPs to integrate, and let them deal with the burden of adoption and usage. There would likely still be marketing efforts required on behalf of the central bank, but it would revolve around areas better suited to their expertise; education, improving financial literacy, economics, and assurance, as opposed to driving user acquisition. In many cases, the consumer wouldn't even necessarily be aware of this; they'd be using the same application, albeit with the back-end plumbing switched across to the CDBC network, as opposed to the private ledger that the PSP was using in the past.

## Extending the reach of DCash

While the above may be highly useful and effective for seeding the network, it is somewhat limited by the fact that it only reaches users who are currently serviced by the LFIs and PSPs that integrate with the CBDC network; users who may very well already be more inclined and accustomed to accepting digital products. A big part of projects such as the DCash pilot is financial inclusion; reaching people unaccustomed to using digital products, such as the unbanked, or the banked who can't access certain instruments, facilities or services. A significant part of CBDC roll-out pilots needs to engage with this disconnected if not disenfranchised demographic, thereby achieving financial inclusion.

With this, the value of 'boots on the ground' and physical, in-person outreach cannot be emphasized enough. In the roll-out of DCash, the ECCB engaged Bitt to prepare a full on-the-ground outreach campaign across the jurisdictions participating in the pilot. Having rolled-out the mMoney solution in Barbados, Bitt has extensive experience in engaging with Caribbean markets for digital financial services. However, due to the pandemic, these plans had to be adjusted into a strategy which was fully remote. Engaging the core demographic in an authentic and effective manner is challenging in the region. Social media and digital marketing can certainly have an effect, however to fully resonate with local populations the value of in-person visits and physical outreach is significant. With the world gradually emerging from the stringent lockdowns and mandated stay-at-home orders, Bitt's collaboration with the ECCB to execute an in-person outreach campaign is beginning to get underway, and the resulting increase in awareness and adoption of the DCash network seems a likely outcome.

The migration of existing payment streams (ie. recurring payments, eg. benefits, tax refunds, supply chain, etc.) from traditional to CBDC systems can encourage users to adopt new means of payment, but requires careful consideration so as not to disrupt the individuals and businesses that rely on those payments.

# Looking ahead

As central banks continue to design, develop, and deploy their CBDC systems, a variety of stakeholders will collaborate to achieve meaningful performance and adoption of the CBDC systems. Those with extensive knowledge about the local economy, culture, and financial system will collaborate with firms who have experience rolling-out digital payments products and services, who will in turn collaborate with the central bank, and the regulated LFIs and PSPs in the financial system. It is important to keep in mind that the economics need to be sound for the LFIs and PSPs to provide CBDC services to their clients. While said institutions will be able to rely on CBDC as public infrastructure, removing back-office costs of processing transactions and securing user balances, they could also miss out on revenue opportunities in the form of lending capacity and other activities derived from the use of reserves and/or client deposits due to said holdings being converted to CBDCs. One can surmise that new economic models and policies will emerge to address these issues in order to maintain the stability of the financial system, and to realize the potential benefits of an upgrade to central banking systems.

Once multiple CBDCs are launched, they will interconnect to realize the benefits of atomic cross-currency transactions that leverage modern financial technology.[15] While cross-currency CBDC projects are currently restricted to wholesale CBDCs, it's clear that similar technologies could prove useful in lowering the cost of remittances at the retail level. It is only a matter of time before multilateral settlement networks of interconnected CBDCs, such as the envisioned Caribbean Settlement Network, begin to service real world use-cases, and grow to service global participants; likely based on capital flows amongst trade partners rather than the participants' geographical proximity. This 'network of networks' could resemble the single ubiquitous payments system that Visa deemed was critical 15 years ago, or could be another stepping stone on the path towards such an outcome.

[14] https://www.bis.org/about/bisih/topics/cbdc/mcbdc_bridge.htm

Bitt has been working on its Digital Currency Management System since 2016, launching the first synthetic CBDC to market in Barbados, the first CBDC in a monetary union in the ECCU, and the first CBDC in Africa with the Central Bank of Nigeria. Follow us for more on Bitt's digital currency deployments.


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