

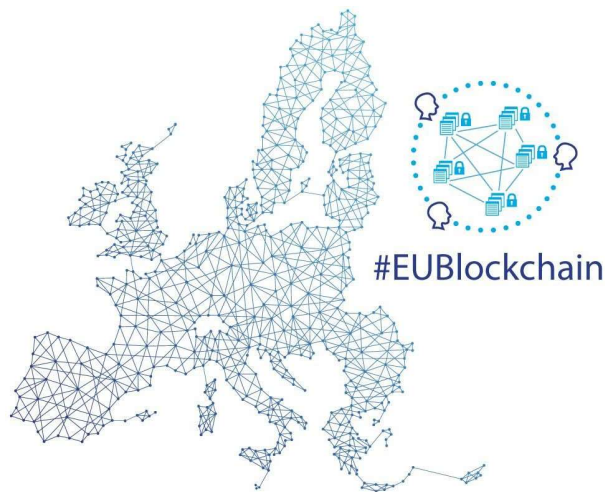


EU BLOCKCHAIN OBSERVATORY & FORUM

Workshop Report – “CBDCs – Do we need them?”

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Online Video Conference, 29 October 2020



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WELCOME

Peteris Zilgalvis, Head of Unit, Digital Innovation and Blockchain, DG CONNECT; Co-Chair, FinTech Task Force, EC opened the meeting. He was followed by **Marc Taverner**, Executive Director of INATBA, who said a few words and put the CBDC into context.

SESSION 1 - USE CASES FOR PROGRAMMABLE MONEY IN THE ECONOMY

Moderated by Dr Nina-Luisa Siedler, INATBA

Presentations and moderated discussion

- Mr. Ricky Lamberty, **Bosch GmbH** (use case: manufacturing 4.0)
- Mr. Etienne Gehain, **ENGIE** (use case: energy communities)
- Mr. Helge Königs, **Daimler** (use case: mobility)
- Mr. Maximilian Forster, **Cash on Ledger** (use case: SME)

Objectives of the session:

- Short presentation of each company’s proof of concept, pilot or plans to use stable coins or a CBDC for payments machine2machine or otherwise.
- Discussion on the long-term perspective: How will the business in the different sectors evolve as machines become smarter and can interact with one another themselves, paying for services they exchange M2M?
- Discussion about the challenges of implementing a stable coin payment solution.
- Attempt to answer the question on whether Europe need a “programmable Euro”?
- Should Libra be considered as a threat or an opportunity?
- Discussion on the recent announcement of the ECB to seriously explore the possibility of issuing a digital euro.

Main outtakes from the session:

- It is very important that the industry is ready, to make use and deliver additional services surrounding CBDC as it is not aligned with what is currently proposed by the European Commission for the Crypto-asset regulation.
- CBDC should aim for ensuring privacy and anonymity for the end users: there is this conflict, as there are rules for anti-money-laundering, counter-terror financing, forcing us to track every payment, and the privacy regulation remanding for a careful use for data provided, and by using digital money certainly more data will be produced.
- CBDCs, currency-wise could bring more stability in the system, given that there will be more cryptographic measurements, using blockchain or DLTs.
- The use-cases are currently being developed and are in the proof of concept phase, meaning, they are almost ready to go live. Thus, the industry would require such a payment method soon. The digital Euro solution still has a long way to go (5-10 years), it is essential to define a mid-term solution until there is a European CBDC.
- Money is competition; the urge for innovation in Europe is tremendous because it doesn’t really make any sense to be protective of the Euro. If another jurisdiction implements a CBDC faster than the EU, this means that new business models are practically being curated. To keep up to that pace of digital

currencies, it is necessary to develop short-term solutions. Maybe the solutions will not be perfect, but it is important to get started from somewhere.

- Europe needs to develop a mindset for implementing something now, because there are already existing solutions in place, in other parts of the world and they are already functional. It is crucial to keep in mind that China has been doing this for 6 years already: they have been doing 6 years of research in Central Bank Digital Currencies. Having that in mind, when there are new protocols emerging, and there are globalized companies operating within a jurisdiction, it is normal that they will seek a solution where it already exists.
- Experimentation is very important and Europe should already start trying different options; perhaps already putting things into place so that these projects are also manageable (here in Europe).
- Potential impact of CBDCs on cryptocurrencies: cryptocurrencies are a very interesting and fascinating niche for tech-oriented people, but so far, they haven't really made it to mass adoption, because they are too complicated to use. Players like PayPal are currently introducing the possibility to pay with cryptocurrencies and that is a major step forward. However, there is the risk that established cryptocurrencies will be overtaken by CBDCs once they are in place, because – aspects like liquidity Vs assets, as well as the checks' implementations, are quite complicated to actually observe, when authorizing a CBDC. So, if there is a Euro as CBDC, there is a chance that the growth of cryptocurrencies, will be slowed-down.
- There is a good chance that CBDCs could drive cryptocurrency adoption even further; it should be borne in mind that no one knows yet what the CBDC will be like, so there is uncertainty on whether they are actually going to be direct competitors; so CBDCs could be a driver for further crypto-adoption.
- The level of adoption of a CBDC will be highly dependent on where it is used/ accepted. For example, if the Chinese CBDC is only used (accepted) in China, then the interest level for this CBDC would be low, apart for raising awareness and for educating the whole market. So, it depends on how the CBDC is regulated.
- How each cryptocurrency is perceived, is also dependent on how it was introduced into the market. The original protocol for Bitcoin for example, was never intended to be a payment platform. Also, in regard to scalability and basic progressive industry use, there is a need for compliance with certain standards. Bitcoin / digital assets should be considered separately from payment networks, because the latter are more regulated, i.e. there exist international regulations to comply with. Cryptocurrencies are more like digital assets for investment instead of creating a multi-modal payment platform out of them.
- Although the development of a CBDC and the digital Euro are very important, it is essential to remember that the crypto scene and the players within were the first to bring innovation in this market. It is not right to just say that cryptos should be kept in an experimental state, as innovation doesn't work like that. It is crucial to be aware that without cryptos' and the innovative tools and options developed for them, we wouldn't be here today.
- The purpose of cryptocurrency initially, was to get away from Central Banks; then, they became so successful in proposing and using exciting tools, that they ended up more or less being copied by the player they intended to replace (Central Banks).

SESSION 2 - STABLE COINS: READY FOR PRIMETIME?

Moderated by Monica Singer, ConsenSys

Presentations and moderated discussion

- Mr. Michael F. Spitz, CEO, Main Incubator GmbH (Commerzbank Group)
- Mr. Christian Catalini, Chief Economist, Libra Association/Professor, MIT
- Mr. Jacek Czarnecki, Maker Foundation
- Ms. Kathleen Breitman, co-founder of the TEZOS project

Objectives of the session:

- Explore why the different actors started to develop a stable coin
- What was their rationale for doing so?
- Identify what is the take of the stable coin providers on the recent ECB Report on CBDC
- What are the current limitations, solutions and what are the main problems that these initiatives have to face apart from regulation (e.g. MiCA) of private stable coin?

Main outtakes from the session:

- The recent choices of the ECB and the recommendations to move from an instant payment into even getting connected to TIPS, are great news. TIPS is very quick and cost efficient and eliminates the need for DLT technology. Although ultimately, there should be a case next to cash and to normal digital currency, there should also be a CBDC.
- It is a good idea to define what stable coins are: traditionally, a stable coin is like a crypto-currency (stabilized algorithm for financial engineering); typically, it is a synthetic peg to the values of fiat currency that is being offered for quite some time. More recently the term is being used to describe tokenized USTC, etc, and that is fundamentally different. Then you have a CBDC; calling Euro a CBDC a stable coin, is a little bit confusing because it could refer to all three of these categories (stable coin, fiat currency, token) ; it should be posed as a CBDC, i.e. a tokenized account in a central bank itself or a tokenized representation of accounts managed by banks but under the exclusive aegis and blessing of a central bank, a massive authority, for massive and synthetic engineering. This is why it is separated and travels around the world of blockchain.
- Wholesale CBDC Vs Retail CBDC: wholesale CBDC is something to replace the interbank settlement but the retail is when you get the money on the street to replace cash in a way, and this is why Libra is going to play such a huge role in the new developments and the new money order.
- KYC /AML requirements: how do you comply with this type of regulations in permissionless networks? This is clearly a challenge for blockchain technology in general and for any transfers of value for public ledgers. Regulations can be built on top of these ledgers: creating islands within the seas of permissionlessness... these also act as gateways, especially for retail, and to use those permissionless protocols, and those gateways would be usually more or less centralized and could be used for compliance, including AML and KYC requirements. This is a perspective that has been seen originally in cryptocurrency.
- Regulations should be subject to change. Very often, there are some regulatory requirements that require some things to be done, that are not necessarily technology neutral. Everyone thought that they are, before getting in the middle of the developments of the blockchain technology. So, this is something that can clearly be improved and is being improved right now with the recent EU proposals.

Do you believe in self-sovereign-identity and how is the Libra scenario going to cope with the KYC/ AML protocol?

- Identity is really important. Essentially, when one thinks about privacy, financial inclusion, the only way to compliant and robust secure financial inclusion would be through better identity standards. These identity standards are going to need that the payment networks are interoperable so that both small and large

players can use the same type of infrastructure, they need to be privacy preserving, so that an enforcement agency or someone with a court order will be able to access the relevant information but otherwise, this is protected both from commercial players, and the broader participants on the network. Broadly speaking, identity is not one of the immediate priorities, for the network – the first step is really enabling fast, cheap and efficient payments. It is going to be really important for the building block for extending access.

- There is a number of regions across the globe where the cost for remittances is often very expensive. These remittances are expensive, as they bare the AML compliance cost, but in reality, their price is high because of lack of competition. The internet has brought innovation in a variety of sectors in the society but because of the burden of regulation some of these benefits have not been implemented in financial services.

What would you do if you were in CBDC's shoes and had to create the Digital euro?

- It is essential to provide more support for SSI; empowering the people in Europe regarding the ownership of their own data; by running a note, adding an additional feature next to cash, next to normal fiat currency, the ECB has the power at the moment, of collecting all 27 member states by putting something forward, like CBDC to combine these in order to empower the greater good for Europe and ultimately showing this data serenity is the way forward and ultimately can help Europe to defend or to mark its positions into the next decades to come.
- A lot of the efforts that are being spread in Europe are really important. It is necessary to try and accelerate as much as possible the pace of the current innovations. There are other regions in the world that are really racing and there are geopolitical implications that shouldn't be ignored. Financial infrastructure and payments are as critical infrastructure as 5G (and others).
- It is suggested that collaboration with other institutions is required, in the hope that identity standards and essentially identity protocols can not only be privacy protecting, but they can also support better KYC compliance and all the things that go together with payments. To build a global system for moving value, identity is going to be the key, not only to financial inclusion, but also for reconciling what is often described as trade-off between compliance and privacy. Again, there is really interesting technology being built in this space and it would be really interesting to see governments building towards better solution. KYC is signed with different banks and is often found to be quite ineffective.
- Competition is very important and it should be allowed. Look at market structure and think about what the competitive advantage of the central bank vis a vis the private sector, and groups of private sector participants. There are different capabilities and when it comes to building tech stack, payment realms, and overall software, it is not clear if that is within the remit of the Central Bank. The Central Bank can do a good job in developing the most safe and secure final settlement layer and ensuring that it allows implementing monetary policy and all the broader remit, of a Central Bank. But the private sector can accelerate ahead a number of applications across different industry verticals and applications. Competition helps promote interoperability. In economics, interoperability and the ability of a small player to operate at the same time as a larger one is extremely valuable to driving cost down, to driving competition and innovation. That is what Europe should opt to see.
- By overengineering CBDC one would end up deploying it in 10-15 years from now, and by then, some of these alternative payment systems will already be in place. These already exist across the globe popping up together with other initiatives that governments have about building infrastructure. Europe should seek for opportunities to promote experimentation and open mind. The most competitive and dynamic ones are the regulatory entities that try to consider the points of view of all dynamics.
- The current strategy of the ECB makes sense: Europe doesn't want to issue the digital euro straight away but wants to be prepared in case there is a need to do so. The approach should be to have sovereign, privileged money – this is the mandate of the ECB; still, the ECB should allow innovation. Europe is not always competing with China or the US with the digital euro, but it also employs the private market in order to develop innovation and be competitive on anything else that emerges elsewhere.

SESSION 3 – CENTRAL BANK DIGITAL CURRENCIES

Moderated by Lukas Repa, Senior Policy Officer, DG CNECT

Presentations and moderated discussion

- **ECB Report on CBDC**, a presentation by Ulrich Bindseil, Director General of Market Infrastructure and Payments, European Central Bank

Panel discussion

- Mr. Ulrich Bindseil, Director General of Market Infrastructure and Payments, European Central Bank
- Mr. Yutaka Soejima, Head of FinTech Center/Deputy Director-General of Payment and Settlement Systems Dept, Bank of Japan.
- Mr. Scott Hendry, Senior Special Director, FinTech in the Funds Management and Banking Department (FBD), Bank of Canada

Objectives of the session:

- Discussion about the new ECB report on the Digital Euro
- Explaining the format and use of digital currency issued by Central Banks
- Sharing experiences and good practices

Main outtakes from the session:

- The ECB does not see the introduction of CBDC (digital Euro) as a means to substitute physical money (banknotes). CBDCs are complementary NOT substituting cash and wholesale bank deposits. Central banks need to create synergies with innovative and diverse industry representatives. The necessity for a digital Euro is not yet so obvious, still there are some benefits to it:
 - Promotion of the digitalization of the European economy
 - Response to the declining use of cash
 - Tackling sovereignty concerns related to foreign CBDCs or private digital means of payment in the euro area
- 80% of Central Banks today are experimenting with CBDCs, in one form or another. The emphasis of these experiments (since 2015-2016) is on wholesale banking solutions.
- The Bank of Japan (BoJ) has had a cooperation with the ECB on a wholesale CBDC – project STELLA. Very recently the BoJ has published its intention to go forward with proof of concept - pilots – to test a general CBDC. The motivation for further investigating a more general purpose CBDC for the BoJ lays behind three elements: 1) supporting the fragmented commercial banking system as there is a decline in the use of cash, 2) support for better private payment services, especially with digital money, and 3) to support new business models in the digital economy. A hands-on exercise to investigate the CBDC design and share the trial with the private sector, is the best way to discover the potential of such a use case. In more detail: The bank of Japan has released a paper explaining the approach of the Bank of Japan on CBDC. The paper, first of all examines the expected functions and roles of a CBDC. The **first function** would be to introduce a supplementary payment instrument to cash. For the time being, it is unlikely that the cash in circulation would drop significantly. If, however, this should become the case, and if private digital money will not substitute for the functions of cash sufficiently, the Bank might provide a general purpose CBDC as a payment instrument alongside cash. As long as there is public demand for cash, the Bank will stay committed to supplying it. The **second function** has to do with the enhancement of stability and efficiency of the overall payment and settlement systems. Even without the decline in cash circulation, it might become appropriate to issue CBDC in order to support private payment

services. The payment services need payment instruments. The commercial banks play a very important role as a payment instrument. But theoretically speaking, the money is a transferable debt. The social anthropology studies suggest that money was born as an information system, to manage debt, so as to buy trust in the Asian Society. There is a broad consensus on the commodity money, like gold, but they are not the origin of the money. So, bank deposit money is a debt, and it is transferable. But bank deposits have other important functions as well: credit creation and international intermediation. In contrast, the central bank debt is a single role debt in the nation. The people use the cash as a real time clearing instrument. When buying goods, we owe debt to the seller. So, cash is the best way to clear the debt, at an instance and with finality. The CBDC is a digital central bank debt and the unicity of the debt has the advantage that it can overcome the weak point of isolated and diversified money. That is incompatible debt issued by different entities, i.e., different commercial banks. So, a good example is the current situation in Japan's cashier payment businesses. Many non-bank services are jumping in the market and they issue their own debt in the form of pre-paid money. The key point is, CBDC is a means of payment, it is not a payment service. We have to distinguish between the payment means (money) and the payment services. The payment services are a financial innovation and the innovator can use a CBDC for their new payment business. From a broader perspective, initiatives such as the Bank's issuance of CBDC and PSPs' innovative overlay services could lead to stable and efficient payment and settlement systems suitable for a digital society. The **third function** goes beyond the payment services as well as financial services. The CBDC and its infrastructure can stimulate and accelerate new business models in the digital economy. It is a real opportunity for digital money. For that purpose, the money system should be open but controlled for security and privacy for individuals and firms. We don't have a clear image how the demand will be formulated in the future. If the demand is increased, we shall proceed. A hands-on exercise to investigate the CBDC design and to share the trial with the private sector, is the best way to discover the potential of this case. So, the Bank of Japan is in favour of supporting the PoC and to explore CBDC design both in institutional set-up and IT systems. Although it is not planned to issue a CBDC right now, they are still willing to explore the CBDC opportunities in the digital age for the future.

- The Bank of Canada (BoC) has its own experimentation project on CBDC, called Jasper, since 2016 (similar project as the ECB with the BoJ with the Stella project). The aim of the project was to primarily learn more about blockchain and how it works. The motivation was that the current system worked poorly – on the one hand, but also, there was a need for better understanding the technology, so it could be applied more broadly. The BoC has looked into the possibility of a retail CBDC, and in February 2020, they issued a document similar to what the ECB one, looking at the retail CBDC use case. The most important thing to examine, is the motivation behind such a move: there was a discussion of the different motivations and the BoC announced that they moving from their research base to again something similar to what the ECB announced, a contingency plan. So, preparing for the contingency that at some point in the future we may actually decide that it is important to issue a CBDC in Canada. The conditions don't currently exist, but at some point in the future, either through declining use of cash, and the disappearance of cash from the marketplace, or the introduction of a widespread adoption of foreign CBDC or private digital currency or a need to issue something to support the digital economy. So, there are different motivations that may come up in the future, those conditions don't exist now, but we need to prepare for them. It might take 5 or 10 years to prepare a robust system, but it is going to take a lot of work and it is important to make sure we start early to be able to be ready when it is decided that the conditions do actually exist. There are many different motivations for a CBDC, but what does the Central Bank bring to the game? Most of the money that is already in the economy is digital. Physical cash is only a small portion of money. Most money and payments are done digitally. The question is **what is needed from the central bank?** What does the central bank bring? It's a number of different things. Most importantly of course is access to a risk-free payment. For commercial bank

money, there is a lot of infrastructure around trying to reduce risk in that money but in the end, truly risk-free money is central bank money. We need to make sure that there is universal access to that. So, we need to make sure that not only do we promote financial inclusion, but we don't allow cash to disappear as it might create financial exclusions. We need to make sure that everybody has access to good, safe payments and maybe it is necessary to involve the central banks to ensure that. There is motivation about the privacy: cash is an extremely private scheme. As it is disappearing, this level of privacy is also disappearing. What can a central bank do to ensure privacy will continue? We are not actively going to remove cash, but the trend is that it is declining. We need to understand what the implications are going to be. Cash provides a competitive alternative for private sector payments. And CBDC could similarly provide that alternative. The private sector is profit-motivated and the central bank is not. This is an important implication in the behaviour and the type of money that is issued. Of course, monetary sovereignty is an important issue. So, if people start using a different unit of account, then, the power of monetary policy is at its spears. So, if for example, we want a Canadian monetary policy, then we need people using the Canadian dollar. So, we need to make sure that Canadian payment systems are the best they can be. So, we need a lot of work to make sure that we help private sector modernize their payments infrastructure so that there is both wholesale and existing retail levels but we also need to think about whether a CBDC fits as well.

**Global stable coins like Libra challenge the sovereignty of central banks to decide about the money circulation. Can private money displace public money?
Can it take away the sovereignty of nations to decide about their fiat currency?
Is it possible to go for a high cooperative hybrid model as suggested by Libra?**

- **ECB:** Libra and the companies supporting it are very big players and they have extreme power behind them. Although when they enter the market, they add competition, they are potential dominant player well. The companies behind Libra are not a charity, they are there to make profit. There is uncertainty on whether in the equilibrium there is going to be a more competitive situation, with more monetary sovereignty, should this company successfully enter the market with its potential client base. Collaboration with private entities who could also rely on CBDC is per se a good idea, but competition and sovereignty issues remain in the sense that we wouldn't want to be dependent on a few very powerful “foreign” companies. That concern remains and some central banks may say that it becomes more intense when someone like Libra would want to enter this market in addition.
- **Bank of Japan:** The process of globalization of trade and finance has not really affected the monetary policy in Japan – there is not such an emerge, probably because Japan is an island nation, and such, the tourism industry is getting bigger, and the foreign currency incoming, makes a limitless market larger. The choice of currency for settlement is a fundamental factor for the hegemony of currency. The funding for trading settlement develops financial markets and the growth of the market leads to the development of national investment. In the process of globalization of trade and finance, the currency hegemony doesn't matter. For example, the constraint of the balance of payment limits the monetary policy in Japan, especially in the high-growth era (as it happened over forty years ago). However, ordinary people in Japan do not have incentive to hold on to falling currency / assets apart from personal investments. But even for the stable coin linked to the value of the legal “tender” it seems very difficult to obtain a broader user. In Japan the competition of the cashiers' payment of services is quite tough. The payment business is typical case of the two-sided market for user side and merchant side. Generally speaking, the prices are still higher on the user than on the merchant side. The price discount for users' side is higher than that of the merchant. The marketing campaign for the user has been overheated in Japan with very large payback user appointed services. The point system is very interesting. It works

like a deposit. It is issued as a payment services’ debt, and compatible to other forms of money, including the deposit. The campaign for the merchants’ side is also overheating. For example, some payment service providers do not charge acquiring fee for a fixed period. So, they do not obtain any source of that income. Naturally, the business model marks a large deficit, but they do not stop the tough competition in order to obtain the big customers on users’ side and merchants’ side. So, the pool of users becomes the source of other business lines in the ecosystem. They fight in the two-sided market, with common pool of payment services users. Most probably Libra will hesitate to join such a market, as it is quite tough. It is understandable that there are significant companies supporting Libra, but it is not enough to survive in such a severe “war”; it is expected that a digital coin would be hard to grab a market share in such a competitive environment.

- **Bank of Canada:** If people decide to leave the Canadian dollar to go elsewhere, it is extremely difficult if at all possible, to do monetary policy. This could indeed be a very significant concern. But there have to be really serious reasons why people would go to a different unit of account. That would only tend to happen if things were only going wrong so as long as macro-policy is done well, people have little reason for looking elsewhere. These efficiency games that are possible in the type of payments that Libra is after, probably mean it is not going to take over a huge part of the payments’ landscape. There are two questions to be asked: 1) is the stable coin being offered in domestic unit of account, and 2) is the institution regulated? If the institution is regulated, and it has an approved the structure, there really isn’t that much difference between a stable coin and commercial bank money. It is private sector digital payment instrument that is backed by assets and there is knowledge on how to deal with that. The structure of a stable coin is different – technology is supposed to be irrelevant; regulations are supposed to be technology agnostic. So, we can deal with it with modifications so that it can be offered in a safe manner. From a monetary sovereignty point of view, it is not a risk. But, that said, Libra is only targeting a few currencies at this point. Eventually they might have 180+ currencies, but at a start, the US dollar, the Euro, the Yen could be there and they wouldn’t have to worry because they are within their unit of account but chances are, they are not going to offer Canadian dollar. And there are certainly a lot of other currencies that they are not going to offer. So, by the time they get to the point of offering those currencies those economies may be Libra-ised. And that would come with serious problems. So, it really depends on where you are, how you should view the risks of something like Libra. The single currency versions can fit regulation much better and pause some of the monetary sovereignty risks. But it is not going to serve everybody in the same way. One has to understand the motivation in order to decide on the best possible response. CBDC may not be the best response. A central bank may need all sorts of responses to keep people using the domestic unit of account.

Cross boarder interoperability of CBDCs/ Basel Group (7 banks working together).

- **ECB:** the work within the Basel Group is not in a very advanced stage. Each Central Bank is at a different stage but most of them are not too advanced (take the ECB for example). So, with regards to interoperability, the goals have not yet been achieved – central banks have not yet managed to articulate their own standards. There is acknowledgement that the lack of progress should be borne in mind as the works of the group move on, and it is expected that the work will become more concrete. The real question though, is how to define interoperability; what is it exactly? it could mean that cross-currency international payments should be allowed. So, a cross-currency layer is built – and by the way, this is an experiment happening now – in collaboration with the bank of Sweden; the Swedes have already taken TIPS as their instant payment system, so there is already some insight of how the experimentation for cross-currency works. There is also need for addressable accounts, in the other currencies so you need some standard like the SEPA standard in Europe, so, there are a lot of questions

but that could be the meaning of interoperability. Another meaning could be, the connections that are being offered, the interface offered to the private sector – could be similar, so that a Global Bank that wants to connect to different CBDCs can use a similar interface. It can mean different things. It is on the radar screen, but it is not already worked out, because, at least for ECB it is too early.

- **Bank of Japan:** The Bank of Japan has a strong interest in the cross-border payment measures and the institutional set up for interoperability. CBDC issuance is not the only solution to the challenges surrounding the interoperability among payment platforms. Interconnection among payment platforms or participation of non-bank PSPs in the common payment platforms with banks could also be a solution. Considering the private sector's comparative advantage in technological innovation, exploring this option could be the starting point to finding solutions. It is important that the CBDC system ensures interoperability with other payment and settlement systems and has a flexible architecture to adapt to changes in the future, including advances in private payment services.
- **Bank of Canada:** According to the representative of the Bank of Canada, cross-border interoperability and the work done by the Basel Group are very important; but for Canada, the domestic use cases are considered a lot more important. It is essential to develop something in the form of “CBDC right” to serve the domestic economy and then figure out how it would work internationally as well. That said, this is still a long run use case goal, so it can't be completely separated from the rest of the work being done. It is important to keep in mind what the implications are of all of the choices made in the domestic level. It is good practice to keep doors open, ensuring that there are chances for having something interoperable at some point into the future.

Appendix

Workshop slides

- [Full deck of CBDC workshop presentations](#)

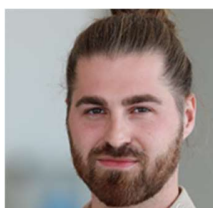
Workshop videos

- Videos from this and all other workshops can be found on the EU Blockchain Observatory [YouTube Channel](#), but also in the EU Blockchain Observatory and Forum website, under reports.

Official agenda

Time	Activity
12.00	Welcome Peteris Zilgalvis, Head of Unit, Digital Innovation and Blockchain, DG CONNECT; Co-Chair, FinTech Task Force, EC
12:05	Putting CBDC into context: A word by Marc Taverner, Executive Director, INATBA
12.10	Session 1: Use Cases for Programmable Money in the Economy , moderated by Dr. Nina-Luisa Siedler, INATBA Presentations by <ul style="list-style-type: none"> • Mr. Ricky Lamberty, Bosch GmbH (use case: manufacturing 4.0) • Mr. Etienne Gehain, ENGIE (use case: energy communities) • Mr. Helge Königs, Daimler (use case: mobility) • Mr. Maximilian Forster, Cash on Ledger (use case: SME)
13.10	Panel Discussion
13.30	Session 2: Stable Coins: Ready for Primetime? moderated by Monica Singer, ConsenSys Panel Discussion <ul style="list-style-type: none"> • Mr. Michael F. Spitz, CEO, Main Incubator GmbH (Commerzbank Group) • Mr. Christian Catalini, Chief Economist, Libra Association/Professor, MIT • Mr. Jacek Czarnecki, Maker Foundation • Ms. Kathleen Breitman, co-founder of the TEZOS project
14:30	ECB Report on CBDC , a presentation by Ulrich Bindseil, Director General of Market Infrastructure and Payments, European Central Bank
14.45	“Session 3: Central Bank Digital Currencies & Stablecoins , moderated by Lukas REPA, Senior Policy Officer, DG CONNECT Panel Discussion <ul style="list-style-type: none"> • Mr. Ulrich Bindseil, Director General of Market Infrastructure and Payments, European Central Bank • Mr. Yutaka Soejima, Head of FinTech Center/Deputy Director-General of Payment and Settlement Systems Dept, Bank of Japan. • Mr. Scott Hendry, Senior Special Director, FinTech in the Funds Management and Banking Department (FBD), Bank of Canada
15.30	End of day

Speakers Biographies



Ricky Lamberty, Bosch GmbH

Ricky Lamberty has been researching and doing his doctorate at the University of Basel since 2019, focusing on "Cryptoeconomic Primitives". Since 2018 he has also been contributing his knowledge to the strategic advance development project "Economy of Things" (EoT) at Bosch Research as an expert in Tokenomics and digital payment.



Etienne Gehain, ENGIE

Etienne Gehain obtained a PhD in Electrochemistry at Middlesex University (London) in 1993. He spent more than 10 years in R&D at Gaz de France, studying the use of natural gas in Fuels Cells and coordinating a European FP6 collaborative project on the insertion of Distributed Energy Resources in electricity grids (EU-DEEP). After 4 years as Head of a support Department in the Key Account Sales Division of GDF SUEZ, he returned to R&D, and was, for 6 years, in charge of the Digital and Energy Storage Corporate R&D Programs. Since 2017, he joined Engie Fab where he contributes to the development of disruptive offers, in particular in the field of Energy Communities.



Helge Königs, Daimler

Dr. Helge Königs, is Senior Manager at Daimler Trucks with 20 years' experience as strategist, CFO, and change agent. Driving DLT projects to bring change to the logistic industry.



Maximilian Forster, Cash on Ledger

Max is passionate about Digitization, Innovation and Blockchain Technology. Throughout his career, he has been recognized as subject matter expert for Blockchain Technology in various roles, was exposed to senior management and established relationships to key stakeholders in the European politics & economy. As such, he is an advisor to the Economic Council of Germany in the working group for digital assets. Furthermore, he is a public speaker and expert on "Central Bank Digital Currencies" within the European Commission & Parliament. Additionally, he serves as expert for digital payments & blockchain at Bitkom e.V and co-founded the association "Blockchain Bayern e.V." with leading academic & political institutions.



Michael F. Spitz, CEO, Main Incubator GmbH (Commerzbank Group)

Author, inventor and visionary, Michael's ideas have influenced the major trends in capital markets and most recently the use of emerging teaching technologies during the past two decades.

He co-invented the digital book-building process at Dresdner Kleinwort Benson in the late 1990s and shaped the future of electronic trading as we know it.

Having worked together with Sean Park, Roman Schmidt, Axel Thill and JP Rangaswani, Michael is the inventor of research & development unit for financial services and main incubator is a testimony to this.

Michael is member of various boards and committees including the world economic forum, techquartier and acatech, and is regularly featured on national and global broadcast (CNBC, BFM, Fox News, ZDF, Bloomberg) and print media (FT, TechCrunch, Wall Street Journal, BoersenZeitung, Handelsblatt). He is a sought-after keynote speaker for emerging technologies, future of digital workplace and finance and all matters related to capital markets and equity.



Christian Catalini, Chief Economist of the Libra Association, and a co-creator of Libra

Christian Catalini is the Chief Economist of the Libra Association, and a co-creator of Libra. He is currently on leave from his role as Associate Professor at the Massachusetts Institute of Technology, where he founded the MIT Cryptoeconomics Lab and designed the MIT Digital Currency Research Study. He is also a Faculty Research Fellow in the Productivity, Innovation and Entrepreneurship Program at the National Bureau of Economic Research. Christian's research focuses on blockchain technology and cryptocurrencies, and he previously worked on the economics of equity crowdfunding and startup growth, and the economics of scientific collaboration. He holds a PhD from the University of Toronto (Rotman School of Management), and MSc (summa cum laude) in Economics and Management of New Technologies from Bocconi University, Milan.



Jacek Czarnecki, Global Legal Counsel, Maker Foundation

Jacek Czarnecki is a Global Legal Counsel at the Maker Foundation. At Maker, Jacek is responsible for global legal matters and public policy. His extensive blockchain experience stems from law firm, consulting, and corporate in-house counsel perspectives. A graduate of top law schools in Poland and the UK, Jacek has focused on the intersection of law and technology in the financial sector. In addition to his role at Maker, Jacek is an active participant in several international blockchain initiatives.

The Maker Foundation is the organization facilitating the development of MakerDAO. MakerDAO governs the Maker Protocol and Dai, the world's first decentralized, collateral-backed stablecoin on the Ethereum blockchain. Dai mitigates volatility through an autonomous system of smart contracts called the Maker Protocol, and through decentralized

community governance.



Kathleen Breitman, Co-Founder of Coase/ TEZOS

Kathleen is Co-Founder of Coase, a software company that aspires to lower transaction costs. She previously co-founded TEZOS, a blockchain-based smart contract platform with an on-chain governance mechanism to coordinate and push upgrades to its network. She has also worked at Accenture, Bridgewater Associates and the Wall Street Journal.



Mr. Ulrich Bindseil, Director General of Market Infrastructure and Payments, European Central Bank

Ulrich Bindseil is the Director General of the ECB's Directorate General for Market Infrastructures and Payment Systems (DG-MIP) since 1 November 2019. Previously, he had been the ECB's Director General for Market Operations (since May 2012) and head of the ECB's Risk Management Division (between 2005 and 2008). Ulrich has joined central banking in 1994, namely in the Economics Department of the Deutsche Bundesbank, after his Economics studies. His publications include: Monetary Policy Operations and the Financial System (OUP, 2014); Central banking before 1800 – A rehabilitation (OUP, 2019).



Mr. Yutaka Soejima, Head of FinTech Center/Deputy Director-General of Payment and Settlement Systems Dept, Bank of Japan

Yutaka SOEJIMA is a head of Fintech Center and Deputy Director-General of Payment and Settlement Systems Department in the Bank of Japan. He joined the Bank in 1990 and mainly worked in research sections covering financial markets, bank supervision, macro prudence, financial engineering, risk management, payment and settlement systems. Some of his papers applied state-of-the-art technology like network analysis, high frequency data, AI, artificial markets, GIS and text analysis for the Bank's current issues. He engaged in the first issue of “Financial System Report” and “Market Review”, a forerunner of “BOJ Review”. He holds a MA in Economics from University of Washington and a BA from Kyoto University.



Mr. Scott Hendry, Senior Special Director, FinTech in the Funds Management and Banking Department (FBD), Bank of Canada

Scott Hendry was appointed Senior Special Director of Financial Technology (FinTech) in the Funds Management and Banking Department of the Bank of Canada in June 2016. In this role, he oversees the Bank's efforts to monitor and research developments and implications of new technologies affecting the financial sector. This includes serving as the business lead on the Bank's central bank digital currency research program. He previously held the role of Director of Research in the Funds

Management and Banking Department and, before that, for the Financial Markets Department.

Mr. Hendry’s personal research has focused on central bank digital currency, electronic money, price discovery in the Canadian government bond market, and central bank communication. He has a Ph.D. in Economics from the University of Western Ontario.