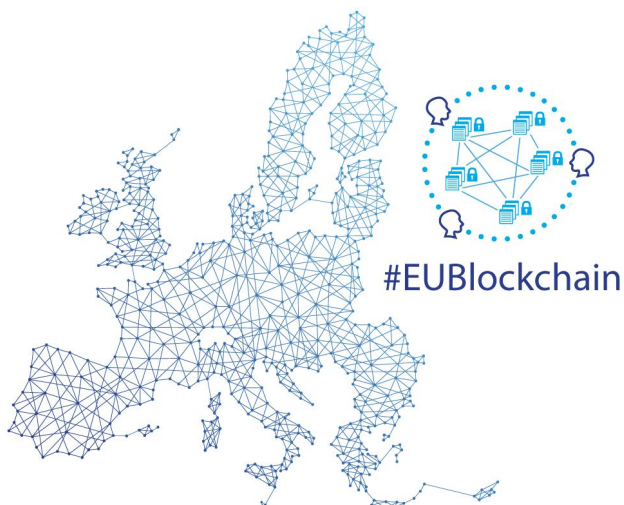


EU BLOCKCHAIN OBSERVATORY & FORUM

Workshop Report - Use cases in financial services – Paris, 11 September, 2019



By the European Commission, Directorate-General of Communications Networks, Content & Technology.

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Panel discussion – A vision of the future of financial services thanks to blockchain

Jennifer D’Hoir (Gide); Jean-Marc Stenger (Forge); Ken Timsit (ConsenSys); Ciarán McGonagle (ISDA)

- Banks today face massively increasing costs due among other things to regulation. We need to provide space for banks to develop new services for clients using blockchain. Banks are built on technology stacks that go back to the 1970s and 1980s. It is difficult to change this except on the margins. With blockchain we have an opportunity to structurally change the way banks operate. We can improve the quality of services also by creating new features and capabilities for clients.
- When we look at the financial industry it is important to recognise that it is much riskier than it used to be. Markets are more volatile, products are more complex, and it is easier to lose track of risks, so all the new regulations have a reason to be there. We are also seeing structural imbalances and geopolitical tensions in things like trade. So we need improvements to make the system safer. We also need improvements to help companies better compete in global markets.
- One key question is whether to use public or private blockchains. The first experiments that banks have been making with blockchain to potentially improve operations or products indicate that there is not a one size fits all answer to the question. In the debate between public and private there will not be one solution that will impose itself. We will have different types of blockchains and protocols, both public and private, that will be adopted for different use cases and value chains. We need in fact to go beyond the public/private debate. It is the same across different businesses inside a single bank, across the different value chains. For each the answer is completely different. There may be some areas where the value proposition of blockchain is obvious and will recommend itself, and others where the value proposition is more difficult to see. For example there are some post-trade systems today that could be greatly improved but that right now are quite cheap and secure, so the value proposition for clients of switching to blockchain is not clear.
- If you look at what blockchain consortia have already accomplished in the financial services space, they are often using it to do some digitisation that was not previously possible with simple internet. There are situations in certain cases where highly decentralised systems are a more suitable way for financial institutions to exchange documents, for instance. So the value of blockchain is not in the digitisation of financial transactions. Its value is in replacing intermediaries. Today intermediaries are generally needed to reduce risk, and many of them, like CSDs, are required by regulation. And that is good as these services are important. Blockchain however could automate and

the role of intermediaries and so carry out these functions in a more cost effective and safe way.

- While blockchain allows us to work in a peer-to-peer and potentially get rid of intermediaries, what we really are seeing is new types of intermediaries arising. Many new projects are doing the same things that banks have done, just in a different way with blockchain. So there may not be such a huge revolution.
- Looking at what the tech can do in the future, we need to focus on legal issues, on data, and documentation. A transaction is really just a series of contractual arrangements. The framework is generally standardised, but there is still a fair amount of customisation in many cases. So there is room for standardisation of the underlying processes. And in many cases we see the market working with regulators to do this.
- Regulators have to deal with many different types of risk and have to strike a balance: the key word is proportionality.
- There is lots we can do with existing regulation. It's important that we consolidate this information so that banks and clients understand the current state of regulation and what is possible, keeping in mind the fast pace of regulatory change. Regulators need to advertise better what is possible at this current stage so that projects can test and pilot new operations and products and services around blockchain.
- It is always important to know what the end goal is. There is no real value to blockchain at the moment other than to automate tasks around risk management currently undertaken by various intermediaries at the post-trade layer. These functions that blockchain could assume are however very important, for example in reconciliation or proof of ownership. The focus of regulation right now should be on making it easier for blockchain to replace those intermediaries.

Talk Battle 1 – Public vs. private network: which blockchain for your financial services infrastructure

In the “talk battle” format, speakers argue different sides of a question, and then workshop participants are invited to come up and support on or the other of the positions as well.

Daniel Ivanier (Fragmos Chain); Manuel Valente (Coinhouse); Ludovic Courcelars (ConsenSys, Moderator)

- The Internet is built on decentralised systems, TCP/IP, DNS, email, web, all of that is decentralised. Not only do these systems work, they have proven that they can adapt. We now have this new online technology called blockchain and, just as with the emergence of all new online technology, we have this debate about should we go the decentralised way or centralised. We should go as decentralised and public as possible for blockchain because it too has been proven to work. See Bitcoin.

- What is new in blockchain are a few simple things: One: it is a database that you cannot corrupt. Once written on it, no way to delete or change. Two: it is always online, always available. There is only one way to keep these two factors: it should be considered a commodity and made available for everyone. To do that blockchain must be kept as decentralised as possible. The core principle of blockchain requires decentralisation and public availability.
- What do banks or financial institutions really want? They do not care about decentralisation. They care about performance, privacy, simplicity, ease of implementation, reduction of cost. The financial system is intrinsically complex: you have KYC, payments, regulatory compliance, mid and back office processes. Private blockchain is good for addressing such things for reasons of ease of implementation and performance. Blockchain can solve for complexity and inefficiency only if it is simple and performant itself. Private blockchain is the way to go.
- One negative example in favor of public systems is Minitel in France, a “private” national network that did not survive the rise of the public, global internet. With blockchain we in Europe want to build an infrastructure and set standards that can be used by European companies to compete around the world. If we focus on private blockchain we risk building a system that works for us, but is quickly overtaken by systems developed by the US and China, especially considering the amounts they can potentially invest.
- A positive example is email: a fantastic tool that has high uptake and works very fast. And it is based on a decentralised system. If someone builds a new email system anywhere in the world based on the email standards, it can reach everyone everywhere. That is the advantage of public systems.
- Closed systems can also create opportunities for monopolies and exploitation later on. Platforms like WhatsApp are controlled by small groups that can monitor and potentially monetise the flow of data at some point. That is a risk of private systems.
- Private blockchains are great in a closed organisation. On a public blockchain it can take between 15 seconds and 10 minutes to get a transaction approved. That is a lot. And you have to pay money for each transaction, so the cost can accumulate rapidly. Within one single organisation in which everyone trusts everyone else, a private blockchain can be fast, efficient and cost-effective. Public blockchains are better for environments where people don't trust each other. A central bank digital currency would be very good on a public blockchain
- There are regulatory issues around permissionless blockchain. See for instance GDPR and data protection. There are other issues legally: some relate to conflict of law issues, where you have a ledger with participants in different jurisdictions. Value transfer can be an issue too, for example what jurisdiction applies. These questions have been dealt with in other contexts, but not yet for blockchain.
- Blockchain is not a simple technology. Banks have to learn about it, but it is a new paradigm, and that is quite complex. In a bank systems must be compliant by design. Therefore it is important for development teams to be able to work on a closed loop. You

learn to ride your bike on a private lane, not a public road. We need to carry out a lot of projects with private blockchain to learn about it without risking opening Pandora's box.

- Smart contracts are ways of doing “private” things on a public blockchain, and carrying out experiments that way. See the DAO. There are other means, like side chains – that is, a new private blockchain connected to an existing public one – inside of which you can do all sorts of private experiments with the technology while using a public blockchain as a base layer. The results of these might be quite useful in the future.
- The question facing private blockchains is why not just use a centralised database instead? The answer is that even in a private blockchain it is possible to get rid of the centralised operator in specific cases. When you have a centralised operator you have someone in the middle who makes the money. See Bloomberg: A wonderful business model in which they take the data from their clients and resell it to them at a very high cost. In a private blockchain you can get rid of that problem. There is a middle ground.
- Public platforms are very appealing. But so far we are lacking a proof of concept for public blockchain. If we are honest, we would acknowledge that the Internet only really became successful when it was centralised through the large platforms that arose during the 1990s.
- Yet we are going through iterations and things are working in public blockchains. A few days ago the Ethereum platform passed 200,000 smart contracts. Some are in production. There is the Maker smart contract which is a lending system, a collateralisation platform for creating a stable coin. It works: it has USD 100 million in it to create a stable coin that people can use daily. There are other things that are working in supply chain on Ethereum. There is Tezos, the first blockchain to implement a proof of stake system, which is much more environmentally friendly than proof of work. Ethereum will do that next year. These are all iterations and signs of progress.
- We need convergence of public and private systems, and you also need competition. Competition prevents monopoly. You have to find the fine line between both. Some banks say: ok I want one provider at the end of the day. There definitely won't be one. It will be more like two to three. Not five: that is not efficient. But also not one. One provider is at first efficient but after five years the provider is rich and no one else. You must find some convergence on technology, data models, etc. but full convergence will never happen, nor should we wish it.

Talk Battle 2 – What’s the best way to regulate decentralized finance?

In the “talk battle” format, speakers argue different sides of a question, and then workshop participants are invited to come up and support on or the other of the positions as well.

Emmanuel de Fournoux (AMAFI); Domitille Dessertine (AMF), Faustine Fleuret (ConsenSys, Moderator)

- Regulation should be technology neutral. If you issue securities with the new technology, under a new protocol, you should comply with current regulations. There is no reason to put in place a specific regulation because you risk market integrity and protection of clients. That doesn't mean that regulation shouldn't take into account the evolution of the technology. An example is implementation of MiFID 1, after which we saw the emergence of high frequency trading, which came about because of competition among trading venues and technological evolution. So the question was do we have to regulate that specifically in Europe. And what was positive under MiFID II is that there are some provisions to address high frequency trading. Regulation should be technology neutral but there is always room to take into account technological evolution.
- In France we have chosen the path of new regulation for all things pertaining to cryptocurrencies, utility coins, etc. that fall outside existing regulation. This was needed for investors but also to help the companies in this area scale up and find clients. It is important to have some regulation in areas that are not presently captured. When it comes to crypto securities markets many of the existing rules can work in the blockchain environment. There are still some obstacles, mainly relating to settlement on blockchain. It is perhaps too premature to have a brand new regulation for this: too much risk that it quickly becomes ill-suited to the way things develop. But we do need to think of a new framework or mechanism to make projects possible in Europe.
- It would be good to have a European approach. Right now all the different national regulators are struggling with these questions. There should be EU-wide guidance on how to regulate or not so as to avoid having 28 different regulations, as is the case today in crowdfunding.
- The European Commission is thinking about that, as this workshop among other things shows. It is working with the national authorities. It has seen the assessments from ESMA etc. and also works with ECB on other aspects. In April this year the Commission started new workstreams, one on the need for a new framework for new business models, and then to look at existing laws to see whether they need to be superseded or can be adapted. It is complex. And national laws differ from one another. We are at an early stage however and have a chicken and egg problem. Are market obstacles really about regulation? Sometimes it is not so clear. Should we change things now, or should we wait because sometimes things solve themselves or at least become clearer?
- It is a difficult question to answer one way or the other. There are technological innovations that are genuinely new, and they have new risks and you have to deal with them. And there are technological innovations that build upon what is already there, and you don't have to touch those.
- Harmonisation of regulation is very important. Perhaps we can start with Eastern Europe. If we can harmonise with the US and Asia, even better, but at least let's start there.
- When we talk about innovation we can also talk about "marketing" regulation. A lot of things are doable under the current frameworks but we do need guidance on some

aspects. We can “market” this guidance as something new, so as to make the EU framework attractive.

- We must try to enhance supervisory convergence. All these firms that need to be regulated have access to different supervisors that sometimes give different interpretations. So we should try at first to talk to each other.
- Monerium has an EU license to issue fiat money on blockchain. The law allowing for this is 20 years old. We can create something new with existing frameworks. There is an opportunity in Europe to do this.
- A few years ago we were talking a lot about decentralisation and disintermediation. But then we see some intermediaries being re-introduced, so we need to find the proper balance. For example today to acknowledge the ownership of an asset you need it to be registered with a custodian. That is technology neutral, but also a requirement. So you are introducing an intermediary. So you could ask if the blockchain could take on the responsibilities of a custodian. We need to try and test this.

Panel discussion – Decentralizing payments: the future of stable coins

Andrea Pinna (European Central Bank); Jón Helgi Egilsson (Monerium); Hubert de Vauplane (Kramer Levin); Martin Calmels (Groupe Casino); Jekaterina Govina (Central Bank of Lithuania), Reto Gadiant (Moderator)

- The ECB has done an analysis and provided a clear definition of cryptoassets that differentiates between the technology and the asset. So just because a DLT is behind it doesn't mean it needs a new name. Digital assets are a new animal because they are digital representations that are considered of value but do not represent a claim on any individual issuer; you couldn't do this electronically before because of copy/paste issues. This problem has been taken care of by DLT. Right now the value of these digital assets is largely a beauty contest. Their price fluctuates. They are inherently unstable. So the request came for central bank digital currencies (CBDC) but that is probably not something for right now. It needs to be researched. And that is where stablecoins come in. The market needs an asset that has a stable value. So let us try and find mechanisms that limit the fluctuation of this value even though they are not a form of currency or a security.
- Monerium believes that fiat currencies, for better or worse, will stay. They have a role. They are important for economies. Cryptocurrencies are great, but they are volatile. What is stable for now is fiat.
- Stability is important for retailers and their customers. Everything has to be indexed to euros.

- The question of stability is not new, and everyone recognises its importance. The question is really how do you stabilise, not the value of stabilisation itself.
- The Central Bank of Lithuania is experimenting with a blockchain-based collector euro coin. All central banks issue limited numbers of collector coins in gold or silver, etc. The Bank of Lithuania decided to issue the first of a kind collector coin on blockchain. It is an issuance similar to crypto kitties, but instead is crypto euros on blockchain. This will be available to all beginning of next year. They will be redeemable for physical coins. This is a good test case. The main question was whether to do it on a public or private blockchain. The decision has been to do it on a private blockchain and then these tokens could be traded on a public one. So a combination. This is a very good way to learn how blockchain works.
- When it comes to using technology, a public institution like the ECB cannot rely on what others say. Internal work is very important. A knowledge of the protocols allowed the ECB to analyse stablecoins. The ECB has a narrower definition of stablecoins than many others. It is not concerned with anything connected to commodities or securities. If a commodity is represented on a DLT that is a token representing a claim, but someone has to store that gold somewhere. The ECB is instead looking at stablecoins that are pegged to a currency or a basket of currencies. Some stablecoins are a tokenisation of currency, and here you can ask if it is a stablecoin or electronic money. Some can be a pre-funded payment system. That is the first category. Then the ECB also looked at stablecoins that are backed by assets. This is not in the world of emoney anymore, this is now the world of collateralisation. So off-chain assets: anything that is stored somewhere. Or backed by crypto assets: backed by on-chain assets. Then there are the algorithmic stable coins, backed by nothing except the user belief that they are worth something. A euro is a claim on the central bank and the central bank is accountable to ensure that the purchasing power of euros will remain stable. Tokenised funds like Tether are indeed very stable, but there is no reason to be surprised – they are backed 100% by fiat.
- For a retailer like Casino cryptocurrencies are a natural evolution after the payment tokens they already use. These are very low margin and have high transaction fees. Cryptocurrencies could reduce this cost. Casino is developing lots of solutions in financial services, C2C lending, supply chain, etc. These currencies can help it develop new solutions. Stablecoins are a useful tool for this.
- There has been a lot of talk about the Libra stablecoin. Central Banks are not wary of Libra, but governments and politicians are. Money is not just about payments but also about sovereignty, about having some influence over the economy. States can use monetary policy to impact economic processes. Money is also about policy, for example our political view on Iran. If America applies sanctions to Iran and Europe says no, but a French company wants to move money into Iran in USD, this money has to go through US payment network. So America has a say there. When some supranational organisation like Facebook decides to create a payment network, that is a great threat, as it reduces government's ability to control the movement of money.

- The ECB understands that there are a lot of worries about Libra, but it would like to reassure people. The Swiss regulator FINMA has said very clearly that the Libra Association is in touch with them and they see it as a payment system, and if it starts it will be subject to the same standards as all other payment systems. That is the relationship between Libra and resellers. What happens under that level FINMA doesn't say. The EU rules are more clear about that: that anything that is accepted as a means of payment – if you take funds and issue an electronic representation – that is emoney. So be reassured the Swiss have already identified what Libra is about and if something happens there are mechanisms to cover it.
- One important thing we can do for innovation from a legal perspective is to qualify things, define them. To qualify the innovation and make sure the use of this technology falls within an existing legal box. If you look at Libra you see regulators around the world saying that in their particular domain it will or will not fall under their definitions. A stablecoin could be viewed as a financial asset, as money, as a virtual currency, asset or derivative. It is also important to see how the redemption rights work. Sometimes it is a full redemption, sometimes partial, etc. you have to look at that. Then you have to look at the reserve. For redemption you need reserves. So what is it? A bank account, a fund, a money market fund, other kinds of collateral? Depending on the answer you then look at what are the rights of the owner of the stablecoin. Is it a conversion right, a redemption right? These are not the same thing.
- An important driver for adoption will be the cost of payments. We have instant payments in Europe. The cost to settle a transaction at the ECB is 0.002 euros. The euro as a currency in its different forms has a very efficient payment infrastructure. The average collateralisation of DAI is 300%. That's more like a pawn broker. So you can have stabilisation but if it costs 3x you might want to ask about that.
- A utility settlement coin is a stablecoin. The USC project raised USD 63 million. Why do they think USC is better than T2S, which works just fine right now? The reason is that they are thinking of the future. T2S is fine now, but we need a settlement coin so that it will be easier to settle digital securities in the future. T2S is not built for that.
- Today we have the infrastructure set up for T-instant (instant settlement). But the problem is interoperability between systems. If you have DLT between them all then you can get T-instant. The issue is interoperability, not distribution of the ledger. T-instant is costly however.
- Stablecoins are not about doing what you already do faster and cheaper. In Iceland the financial system collapsed in 2008. Emoney is the ultimate stablecoin, but also an opportunity to improve how money works. There will be innovation and improvement on stablecoins in this area. To make not just payments better, but to allow the general public to take control of their funds. We should encourage policy makers to look at ways to improve this and reform the monetary system.
- One reason to have stablecoins is to pay for things that exist on a blockchain. We need a payment system for that. So two questions: a) can we accept current stablecoins or are there regulatory problems, and b) if someone wants to create a token backed by a

promise of 1-1 redemption, what is the business model for that? It seems like blocking a lot of money at negative interest rates for an object that people can exchange without giving the issuer a commission. What is the business model for a stablecoin?

- In Europe almost anything can be accepted as a means of payment, except for paying taxes. In Lithuania there are no restrictions on merchants to accept crypto and the major ecommerce providers accept it. But they don't keep it on their balance sheets: they convert right away.
- Retailers for instance need to accept as many means of payments as possible because they can see that today the younger generation is diversifying their money. They are using the Revolut app and crypto. So retailers need to be prepared for this. Maybe a stablecoin can be a solution.
- The current payment system in the eurozone is as good as crypto. What Europe needs to keep an eye is what happens with a stablecoin like Libra in other regions. If it has a major impact elsewhere that would concern us in Europe too.

Appendix

Workshop slides

- [Workshop - Use cases in Financial Services - Overview Slides](#)
- [Fragmos Chain slides](#)
- [Current and future perspectives on eHealth policies & blockchain](#)
- [The State of Blockchain in Healthcare and Life Sciences](#)
- [Convergence of Blockchain and Secure Computing for Healthcare solutions](#)

Workshop videos

- Videos from this and all other workshops can be found on the [EU Observatory website under reports](#).
- Videos specific to this workshop:
 - [Financial services workshop Part 1](#)
 - [Financial services workshop Part 2](#)
 - [Financial services workshop Part 3](#)
 - [Financial services workshop Part 4](#)

Official agenda

Time	Activity
9:15	Registration & Welcome Coffee
9:50	Introduction of the day - Agenda and objectives of the day
10:10	Panel discussion – A vision of the future of financial services thanks to blockchain Jennifer D’Hoir (Gide); Jean-Marc Stenger (Forge); Ken Timsit (ConsenSys); Ciarán McGonagle (ISDA)
11:10	Battle 1 – Public vs. private network: which blockchain for your financial services infrastructure? Daniel Ivanier (Fragmos Chain); Manuel Valente (Coinhouse); Ken Timsit (ConsenSys)
12:10	Battle 2 – What’s the best way to regulate decentralized finance? Emmanuel de Fournoux (AMAFI); Domitille Dessertine (AMF)
<i>13:10-14:10 Lunch break</i>	
14:10	Panel discussion – Decentralizing payments: the future of stable coins Andrea Pinna (European Central Bank); Jón Helgi Egilsson (Monerium); Hubert de Vauplane (Kramer Levin); Martin Calmels (Groupe Casino); Jekaterina Govina (Central Bank of Lithuania)
15:10	Working Sessions – “The way forward in the EU”: Is the current regulation adapted to decentralized financial services or should it be improved?*
16:30	End of the day

**Note that for time reasons, the Working Session planned for 15:10 was skipped.*