

Carl-Ludwig Thiele: Industry Dialogue on "Distributed ledger technology - potential benefits and risks"

Introductory statement by Mr Carl-Ludwig Thiele, Member of the Executive Board of the Deutsche Bundesbank, at the G20 conference "Digitising finance, financial inclusion and financial literacy", Wiesbaden, 26 January 2017.

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Mr von Weizsäcker,

Ladies and gentlemen

Whenever a technical topic attracts as much media attention as blockchain technology has, it must mean it's something special, especially considering the topic itself is not an easy one.

It's safe to say that there is much anticipation surrounding distributed ledger technology – some feelings of hope, some of fear. And the influence this technology is likely to have extends far beyond the financial sector.

The Deutsche Bundesbank operates large financial market infrastructures and also develops these further in line with technological advances. For this reason, we need to be aware of the potential benefits and risks of this technology early on.

Together with Deutsche Börse, we have developed a preliminary prototype for blockchain-based settlement.

This prototype has the following capabilities:

- ♦ Settling payments based on blockchain technology,
- ♦ Transferring securities,
- ♦ Processing basic delivery-versus-payment transactions, where securities purchases are settled and paid for simultaneously, and
- ♦ Processing basic corporate actions, such as coupon payments on bonds and redemptions of maturing securities.

The aim of the project is to learn, step by step:

- ♦ How blockchain technology works,
- ♦ How secure and reliable blockchain-based transactions are,
- ♦ Which factors affect the costs of blockchain-based transactions,
- ♦ How efficient and effective blockchain-based processes are, and
- ♦ How existing processes may be improved using blockchain technology.

One of the key points here is increasing process efficiency. By using a shared data pool across all entities concerned, it should be possible to standardise and simplify some of the overly complicated transaction monitoring processes we have today. In addition, a shared data pool in combination with a flexible access rights concept would, for example, also establish the conditions in which the relevant regulatory reporting and internal audit requirements could be met with reduced effort and designed more securely.

We opted for a concept based on a Hyperledger blockchain. The most important considerations for us when designing the Hyperledger-based prototype were:

- ♦ Having a closed – or “permissioned blockchain” – network, where only authorised users can transact on our blockchain network.
- ♦ Confidentiality and responsibility – we believe that even in the future, financial transactions will continue to be governed by today’s standards as far as confidentiality and acceptance of responsibility for effected transactions go. That’s why each individual transaction is encrypted, along with the identities of the transacting parties.

Our conceptual study shows that blockchain technology can be adapted to meet the current needs and requirements of the financial system. The prototype works. Having said that, its further development for mass use is still presenting many challenges.

The conceptual study is far from being market-ready. We are currently only at the preliminary stage with a test application, with which we are able to simulate large-volume delivery-versus-payment securities transactions.

At this point, we are unable to say whether this application can be adapted for mass use or whether this is even a viable option in terms of costs.

So, to summarise: our joint project has seen the development of an elementary, but functional, blockchain-based application, which caters to the basic requirements of the financial sector.

With this as our starting point, we aim to develop a technically more sophisticated prototype, capable of providing information on technical performance and thus allowing comparison with our present settlement infrastructure.