



Berlin, August 16, 2023

How Blockchain Technology will Digitize the Euro

The digital Euro is a much-discussed topic in the financial world and the digital economy. As a digital form of the official currency of the Eurozone, the digital euro has the potential to revolutionize the financial system and open up new possibilities for transactions, payments and monetary policy. This focus paper on the digital euro aims to provide an overview of the current state of play and highlight the goals, challenges and potential impact on the economy and society. Currently, the digital euro is still in the development phase. The European Central Bank (ECB) has launched several pilot projects to explore the technical and economic implications. However, the implementation and introduction of the digital euro requires the approval of the member states and a thorough assessment of the opportunities and risks.

Authors (Co-Leads of the Bundesblock Working Group “Digital Euro”)

Philipp J.A. Hartmannsgruber, Board of Directors Bundesblock | PJAH Consulting

Sarah Rentschler-Gerloff, Practice Partner DXC Technology Banking & Capital Market



1. What is the digital Euro?

The digital euro is a digital version of the physical euro banknotes and coins to be issued by the ECB. It is a centralized digital currency that will have the same value as the physical euro and will be regulated by the same institutions. The aim is to provide citizens and businesses in the euro area with an additional digital payment option and to reap the benefits of digital financial technology.

Technical basis of the digital Euro

The ECB is still testing different technologies and approaches for the deployment of the digital euro, including blockchain technology and other alternatives. Currently, no final decision has been made on any of the technologies. Although the trend in retail CBDC (Central Bank Digital Currency) is away from blockchain, we still see the benefits that blockchain technology can offer. Either as the technological basis of the digital euro, e.g. to protect the privacy of users, or to protect against manipulation and fraud. If the blockchain is not used as the underlying technology of the digital euro, at least an operability to existing blockchains should be enabled in order to be able to map further use cases such as Machine-To-Machine (M2M) payments or Pay-Per-Use (PPU).

2. Goals, advantages and challenges

Financial inclusion

One of the claims issued by the ECB is that the digital euro should not replace cash, but complement it. The digital euro is sometimes expected to help promote financial inclusion by giving access to the financial system to people who previously did not have access to traditional banking services. The use of the digital euro in retail could speed up transactions and make payments more efficient, leading to time and cost savings.



Impact on banking

The introduction of the digital euro could lead to a shift in payment habits, as payments with the digital euro may replace traditional bank transfers or cash transactions. However, banks would need to adapt to keep up with the increasing use of the digital euro and adapt their services to the new requirements. They could identify new business opportunities in areas such as digital wallets and custody solutions or payment processing services. However, the integration of the digital euro could increase competition between traditional banks and non-bank players, such as FinTech companies or payment providers.

Challenges in payment transactions

The integration of the digital euro requires a robust technical infrastructure to handle a large number of transactions securely and efficiently. The security of digital euro transactions and the protection of personal data are crucial and require adequate security mechanisms to prevent fraud and data breaches. In addition, standards and interfaces need to be developed to address interoperability issues when integrating different blockchain protocols.

Impact on society

The introduction of the digital euro could lead to a digital divide, as not all people have the necessary technology or knowledge to use it. Training is needed to not exclude anyone. Privacy policies and awareness raising are needed to address privacy concerns. The spread of the digital euro could affect payment behavior and requires adjustments to infrastructure. Security against cyber attacks and displacement of traditional banks are other challenges that require a reliable technological infrastructure.



3. Conclusion

The digital euro is a promising initiative that has the potential to modernize the financial system and provide new digital payment opportunities for the people of the euro area. However, the introduction of the digital euro comes with many challenges and risks that need to be carefully considered to ensure a successful and secure transition. The decisions that will be taken regarding the digital euro will undoubtedly have an impact on the economy and society and should therefore be taken forward with caution and care as well as communicated clearly. At present, the benefits of the digital euro are not yet clear in relation to the diversity of payment processes that already exist. The ECB has yet to elaborate on this. Creating acceptance of the digital euro in our democratic social structure is a major challenge. Decisions regarding the implementation, provision and operation of the digital euro must be made and legitimized politically.