



CBDCs as a gateway to Web3

Banks are on the verge of the next wave of digital transformation

The evolution towards Web3 could spark nothing less than a revolution in the digital world. A key element of this next evolutionary stage of the Internet, which is characterized by strong decentralization and interoperability, is decentralized financial transactions. Yet, traditional payment methods do not meet the requirements imposed by those transactions, and a fundamental rethink is in order. There are plenty of approaches to address this issue, especially in the crypto market, which now

consists of cryptocurrencies and tokens for a wide variety of applications. Such upheavals in the area of payment methods also have extensive consequences for central banks.

Central Bank Digital Currencies (CBDCs), which are a digital representation of cash, are considered a response to these developments. CBDCs allow central banks to fulfill their mandate – the provision of a legal tender – even in a world of digital

payment systems. Our analysis shows that younger consumers in particular have a positive attitude towards a central digital bank currency. Yet how banks best react depends heavily on the specific design of a CBDC. ➔

Web3

Web3 is the third stage in the evolution of the internet. While Web 1.0 is primarily characterized by static websites („read“), Web 2.0 focuses on content that users have created themselves („read and write“). A classic example thereof is social media, where users can provide content themselves. Web3, on the other hand, focuses on digital ownership („read, write and own“). Blockchain technologies are used to unambiguously prove and transfer digital ownership. Due to decentralization, there is no overarching authority that could change this system on its own. Interoperability is also important, allowing digital property to be transferred and used between different Web3 applications.

Web3 as a driver for digital legal tender

The basic idea behind CBDCs is to offer legal tender in digital form. For this reason, they are issued exclusively by central banks. A distinction is made between a retail CBDC (rCBDC), which is intended as a means of payment for the general public and businesses, and a wholesale CBDC (wCBDC), used for interbank processes and liquidity management, among other things.

Central banks around the globe are pursuing initial projects in which they first weigh up the benefits and risks. Design scenarios will be used to examine how certain design options for a CBDC affect all relevant stakeholders. In Europe there is a lot of activity going on as well: Since October 2020, the European Central Bank (ECB) has been publishing reports on the progress of the investigative phase of a „digital euro“, which lasted until October 2023.^{1,2} In November 2023, the preparation phase officially began. With a current draft law, which is intended to provide the legal basis, the European Commission is supporting the ECB in the introduction of a European CBDC.³

These CBDC plans are primarily driven by social and technological developments. One of them is the development towards Web3 described above. This next evolutionary stage of the Internet is essentially based on decentralized network infrastructures and characterized by transparent, immutable transactions, carried out securely around the clock without the need for a trusted intermediary, such as a bank in case of financial transactions. Such features enable new, innovative business models and could bring about fundamental and enduring change to existing, long-term processes.

While the core features of decentralized cryptocurrencies, such as the programmability of transactions, are used by central banks as inspiration for CBDCs, CBDCs themselves do not have to be mapped to decentralized networks. They not only have to meet the requirements of traditional payment systems such as safety, efficiency, speed and integrity, but also meet the challenges of new technologies in terms of traceability and transparency.

CBDCs as an enabler of innovation

Existing decentralized means of payment, however, come with considerable drawbacks, for example when taking a look at security issues. This includes the risk of fraud or the high volatility of frequently used cryptocurrencies. Without a blockchain-based CBDC or secure private sector alternatives from the financial industry,

end users are forced to tolerate such risks if they want to take advantage of Web3 applications because those applications almost exclusively use blockchain-based means of payment to handle processes and services. Another challenge of prominent cryptocurrencies arises from their transaction costs, which are dependent on supply and demand. At times of high demand transaction costs are very high, making crypto unprofitable for everyday small transactions. A CBDC that offers a solution to such problems makes Web3 applications more accessible and promotes innovation in this environment.

A similar argument can be made for the business world: More and more SMEs and large corporations are concerned with the potential impact of Web3 on various business areas. A secure and compatible means of payment is required here as well to test new Web3 use cases. Clearly if a central bank digital currency succeeds in meeting all the requirements of industry and consumers, it will unleash great potential for innovation.

“The introduction of CBDCs in the context of Web3 underscores the ongoing merging of government financial policy and digital innovation. These currencies will not only increase the efficiency of transactions, but lay the foundation for a host of new applications in the Internet of the future.”

Jens Hermann Paulsen
Director | Lead Web3 and Digital Assets

¹ European Central Bank, Bericht über einen digitalen Euro, https://www.ecb.europa.eu/paym/digital_euro/report/html/index.de.html (last called July 28 2023).

² European Central Bank, Digital Euro Timeline, https://www.ecb.europa.eu/paym/digital_euro/shared/pdf/Digital_euro_project_timeline.de.pdf (last called July 28 2023).

³ Tagesschau.de, So soll der digitale Euro funktionieren, 28.6.2023, <https://www.tagesschau.de/wirtschaft/verbraucher/digitaler-eurokommission-vorschlag-100.html> (last called July 28 2023).

The extent to which a CBDC meets these expectations highly depends on its specific design. First of all, general cost advantages are to be expected from efficiency gains. If the CBDC is based on a blockchain, there will also be a high degree of transparency and traceability. This feature can provide further security and assist in the fight against criminal activity, such as money laundering or terrorism financing. Yet the high level of traceability must be balanced against the degree of privacy that can still be granted to individual citizens. Furthermore, CBDCs could benefit from a trust advantage due to state legitimacy.

Survey analyzes consumer sentiment

But how do consumers feel about CBDCs? As part of the Deloitte Consumer Spotlight Survey from June 2023, 1,000 consumers were asked for their opinion on a wide range of topics based on a representative sample in Germany. Attitudes towards a digital euro were also surveyed. The results are examined in more detail below and clearly show that younger and older generations have very contradicting opinions on central bank digital money.

Trust is particularly high among young people

Personal finance is a particularly sensitive matter in the eyes of many consumers. Trust plays a central role in the acceptance and use of a new digital currency. If a digital euro has shortcomings compared to existing payment methods, it is unlikely to develop into a real option. Considering that the new type of central bank money is backed by a public- rather than a private-sector institution can have a significant impact on trust.

Figure 1 illustrates the extent to which this is the case, and shows central banks with a slight advantage of trust. Compared to the payment methods already in use, a digital euro has nothing to be ashamed of. Yet a closer analysis of the feedback reveals that

younger and older generations have very different views, since the trust advantage of state institutions is particularly widespread among 18- to 34-year-olds.⁴

Older participants, on the other hand, are much more skeptical: In the 55+ generation, only a very small percentage places greater trust in the digital euro when it is issued by a government agency. The concerns are also reflected in the potential utilization rate, as 41 percent in this age group would never use such central bank money even after its introduction (18 to 34 year-olds: 5%, 35 to 54 year-olds: 19%). Fears and concerns about a digital euro must thus be dispelled, especially from this generation.

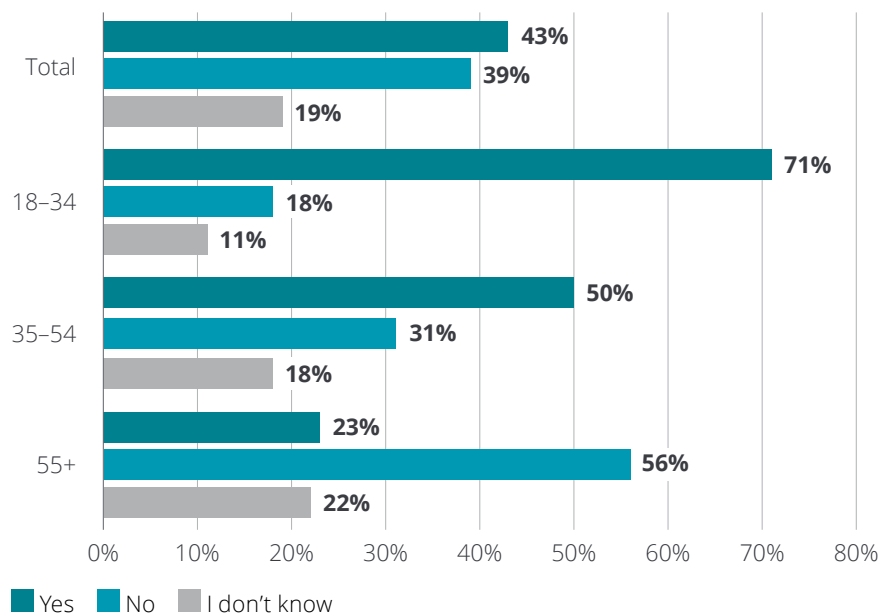
Great desire for data protection

To better understand the complexity of trust, participants were also asked about various issues for which they would trust a

government institution over their current payment service provider. A look at Figure 2 reveals that central banks are ahead of the game, especially when it comes to data protection. Since the sale of data is part of the business model of many private companies, state institutions enjoy greater trust because there is less incentive to misuse data.

The situation is different when current and future consumer interests are taken into account, as these bring up the rear. Only one-third are of the opinion that a state institution is more likely to put user interests in the foreground. Looking at future changes of the service, trust even falls to a quarter. There is greater confidence in the competitive structures of the private sector. The possibility of switching to competitors forces companies to become more customer-oriented.

Fig. 1 – “Would you trust the European Central Bank, as a government institution and over your current bank or payment service provider, to issue a digital euro?”
(Categorized by age group)



Source: Deloitte Consumer Spotlight Survey June 2023

⁴ The age groups can be divided into the following percentage shares of the overall population in Germany as of December 31 2022: 18- to 34-year-olds: 20% of the overall population; 35- to 54-year olds: 26% of the overall population; 55+ year-olds 38% of the overall population. Source: Federal Statistical Office of Germany

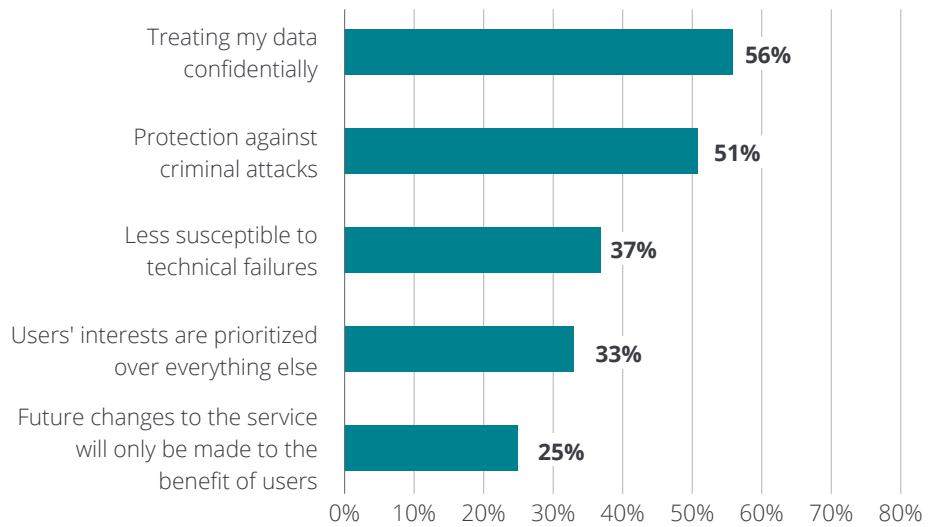
This makes it all the more important that the self-interests of the authorities and the interests of other stakeholders (commercial banks) take a back seat. Moreover, it should be clear from the design of the currency that this principle will not be violated in the future. Only then can consumers unequivocally rule out the possibility that the original form of the new means of payment is not a bait and switch or that it will be modified to the detriment of users in the event of serious changes in the political environment.

Cheap and convenient means of payment are particularly tempting for consumers

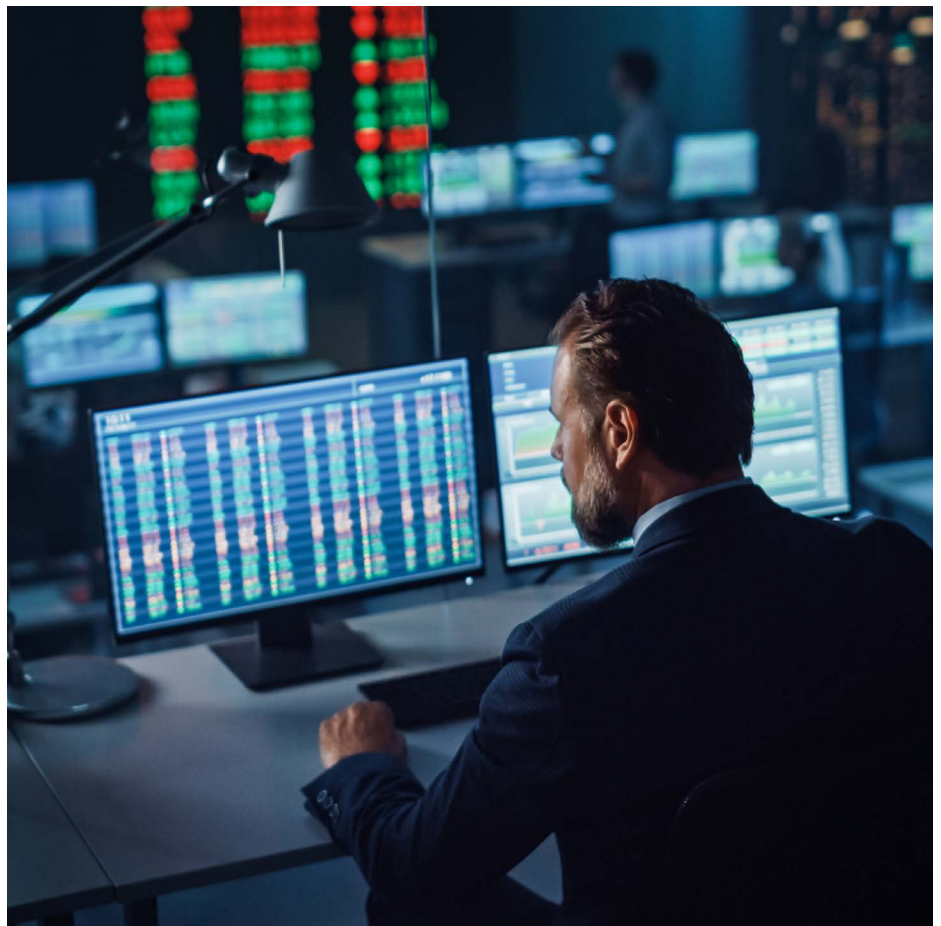
While trust forms the basis for public acceptance, it is not the only success factor. Consumers must see concrete advantages over the multitude of alternatives if they use central bank digital money. Consumers are particularly price-conscious: among all the reasons for giving preference to the digital euro (see Fig. 3), free-of-fees tops the list.

Convenience and security are rated similarly and are also strong arguments for a digital euro scoring points with consumers. An authentication mechanism that reconciles the two is therefore a promising approach.

Fig. 2 – “For which of the following issues would you trust the European Central Bank as a government institution over your current bank or payment service provider when issuing a digital euro?” (multiple choice)



Source: Deloitte Consumer Spotlight Survey June 2023

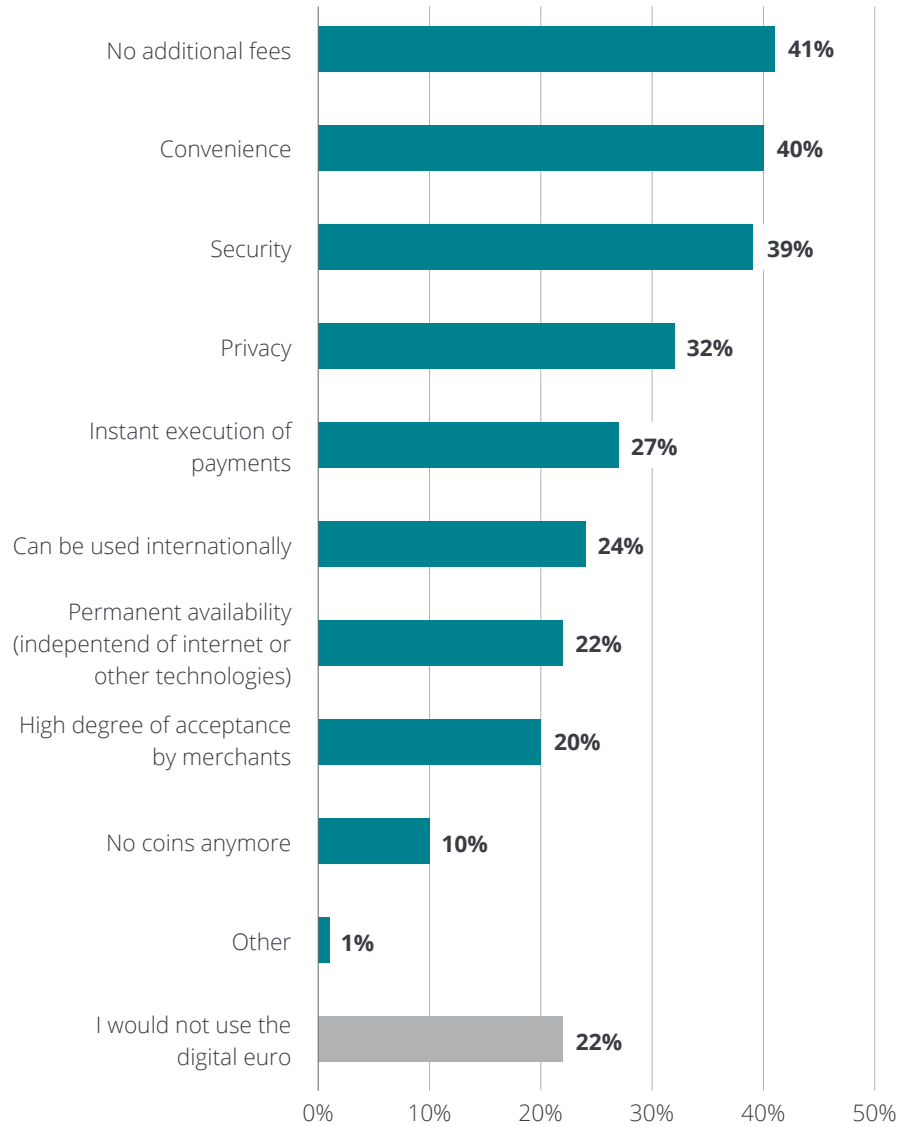


Consumers also focus on privacy. Users of private payment service providers are often unaware of how and for what purposes their data is evaluated and used. Higher standards in this area are therefore a real distinguishing feature. However, more than 20 percent are not convinced by any of the reasons mentioned, and would not use the digital euro in any case.

For those less skeptical about its use, the question arises as to which means of payment previously used will be replaced. Figure 4 provides more detailed information. Digital cash clearly lives up to its name, since physical cash is by far the top substitute. For other payment methods such as card payments and bank transfers, a digital euro would only serve as a substitute for a significantly smaller percentage of respondents.

The results of the analysis reflect that the features in Figure 3 are already sufficiently fulfilled by a large number of modern means of payment. The switch to a digital euro is not absolutely necessary in the eyes of many consumers. Cash is the exception: since it is less convenient to use, for example, switching to the digital variant seems much more attractive here.

Fig. 3 – “Which of the following features would make you prefer the digital euro to other means of payment?” (multiple choice)



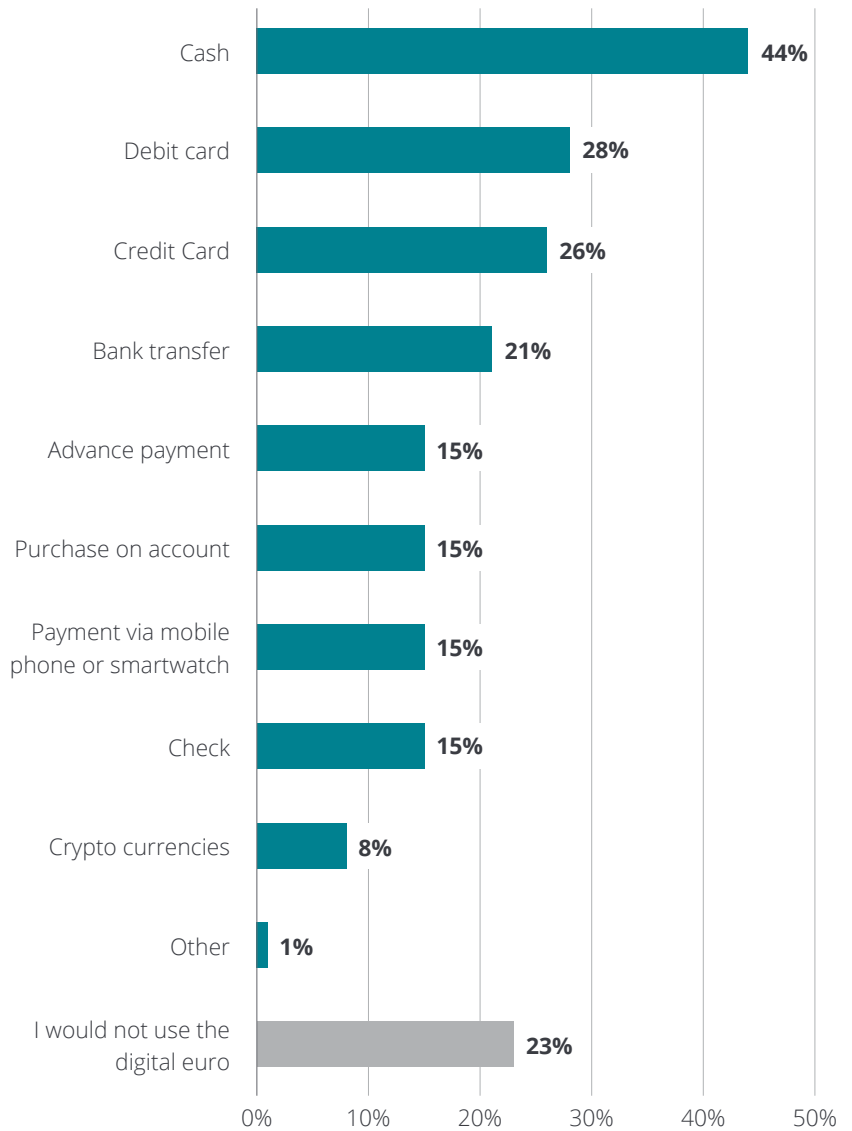
Source: Deloitte Consumer Spotlight Survey June 2023

Specific design remains an element of uncertainty for commercial banks

The precise design remains an element of uncertainty for commercial banks. Younger consumers are already recognizing the added value of CBDCs. Meanwhile, institutions and politicians in Europe are working intensively on the design of a digital euro. It is highly likely that a European CBDC will see the light of day, even if it is not launched for a few years. What is less certain, however, is the concrete design of the digital euro. The implications for banks will largely depend on exactly what is implemented, requiring a closer look at different characteristics and scenarios.

Competition with current payment options is key. The previous analysis shows that a digital euro is primarily seen as a substitute for cash, even if consumers also replace card payments to some extent. Since the preference for cash is particularly strong in Germany, the potential of CBDC as a cash substitute is high. On the one hand, this means that cash supply will become less relevant thanks to declining demand. On the other hand, however, it means that private-sector payment cards and methods must become more attractive to consumers so they do not lose their relevance. For example, cashback and other forms of loyalty and bonus programs are suited to this purpose.

Fig. 4 - “Which of the currently established means of payment would you replace with the digital euro?” (multiple choice)



Source: Deloitte Consumer Spotlight Survey June 2023

Demand deposit costs are on the rise

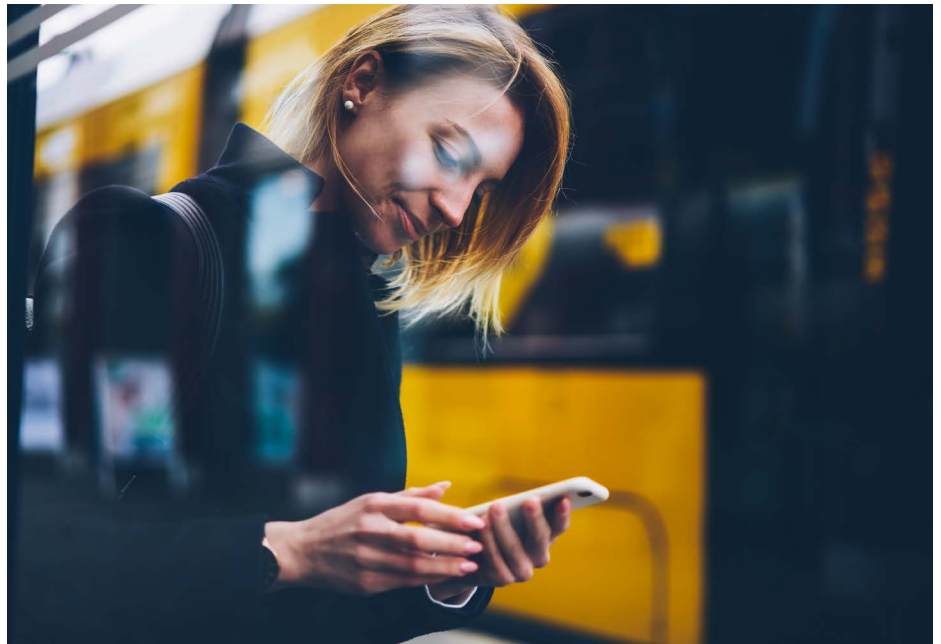
There is also a need for action in the area of demand deposits. Non-interest-bearing current accounts and low-interest call money accounts become less attractive if money in the form of the digital euro can be kept and transferred without risk to banks.

The extent to which client funds are withdrawn depends primarily on caps on holding and payments in digital euros. Depending on the income distribution of the clientele, even low holding limits – as little as 1,000 digital euros – can have an impact on deposits. Depositors must also be enticed with higher interest rates at more generous limits, which increases funding costs for banks.

New technical infrastructure boosts efficiency and opens strategic options

In addition to such price increases, however, there is also potential for cost reduction, for example through a wholesale CBDC. This can significantly increase the efficiency and speed of interbank transactions, even if requiring investment for the conversion at the beginning. Opportunities for process optimization and innovation are also opening up in the retail sector, such as peer-to-peer transactions between private individuals and digital offline payments.

There are also far-reaching consequences from a strategic point of view, as payment systems increasingly decouple from traditional banking due to the increasing prevalence of private cryptocurrencies, a trend fueling the adoption of CBDCs. It is still unclear what position commercial banks will take on the issue and management of CBDCs, although previous ECB publications suggest they will play a central



role in issuing CBDCs. The same applies to the respective remuneration models, which would be used to compensate banks and other payment service providers for their efforts.⁵

Options for strengthening future viability

For a future-oriented setup of their own business model, institutions have a number of options to prepare for the upcoming changes:

Reevaluate current business models

CBDCs have a different effect on each line of business. It is important to examine carefully where sales are plunging and which activities are becoming unprofitable, but also where new potential is emerging. It is helpful to work with different scenarios for the concrete design of the digital euro.

Redefine your role

Banks will have to focus ever more on technology in the future, because the introduction of a CBDC will drive digitization of the financial world even further. But where old business areas are collapsing, enormous opportunities will arise from Web3. To seize them, it is imperative to see oneself as a tech enabler. Banks must also be aware that other players in the financial industry, such as exchanges, payment providers, custodians and fintech companies, will face the same challenges and look to take advantage of the same opportunities in Web3.

⁵ See for example European Central Bank, Progress on the investigation phase of a digital euro – fourth report, https://www.ecb.europa.eu/paym/digital_euro/investigation/governance/shared/files/ecb.degov230713-fourth-progressreport-digital-euro-investigation-phase.en.pdf (last called July 28 2023).

Focus on generational differences in customer needs

CBDCs and Web3 are particularly attractive to younger consumers. This is reflected in this generation's expectations of financial products. Banks that hope to serve a younger target group must address consumers with these topics without losing sight of the needs of older consumers, who are (still) significantly less interested in CBDCs.

Build technical knowledge around Web3 and CBDCs

Moreover, further expertise in the field of Web3 should be built up as quickly as possible in order to benefit, as one of the first market participants, from the advantages of a digital euro and its technical infrastructure. Collaborations with FinTechs or appropriate acquisitions should also be considered.

Implement regulatory changes at an early stage

Implementing the new regulations and changes that come with the introduction of CBDCs should be a high priority. Delays have the potential to slow down the entire CBDC strategy. Anticipating regulatory adjustments and accumulating the necessary knowledge at an early stage facilitates entering the market before competitors. Furthermore, (expected) regulatory changes must be firmly taken into account in the strategic planning of CBDC.

As with most technological developments, for CBDCs and Web3 the speed and ability to adapt are crucial to the long-term success or failure of the actors involved. Only optimal preparation can significantly improve the chances of market leadership and its associated competitive advantage.

Those who master the symbiosis between technology and traditional banking expertise can look forward to the Web3 era with great optimism.

“What is certain is that banks are facing a huge disruption, especially in the payments area.”

Thorsten Gudjohns
Partner | Lead Offering Banking Operations



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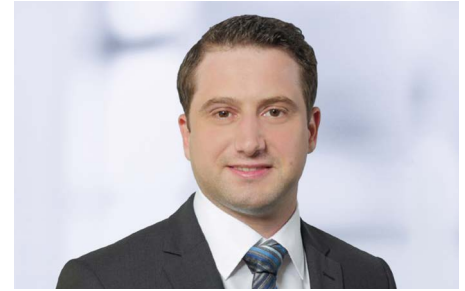
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