

Talking point

Are you already experimenting with blockchain? (Fintech #6)

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No? Then it may be worth taking a look at this digital technology and its potential areas of application. Alongside unsupervised learning algorithms and early cognitive systems, blockchain is an example of a digital technology that not only calls tried-and-tested business models into question, but is already turning them on their head. It may have its origins in the financial sector, but a universal spectrum of applications is beginning to open up both within and outside the fintech world. Those who have tried experimenting with digital technologies have quickly found that in many cases they make existing business models, processes and infrastructures noticeably more efficient and thus increase productivity. This has certainly been the case with blockchain, which is why it is a good idea for many decision makers (not only) in the financial sector to keep a close eye on developments and, above all, the various experiments with blockchain that are currently ongoing. Ideally they would experiment with various projects and pilot studies themselves in order to come up with their own ideas and try putting these into practice.

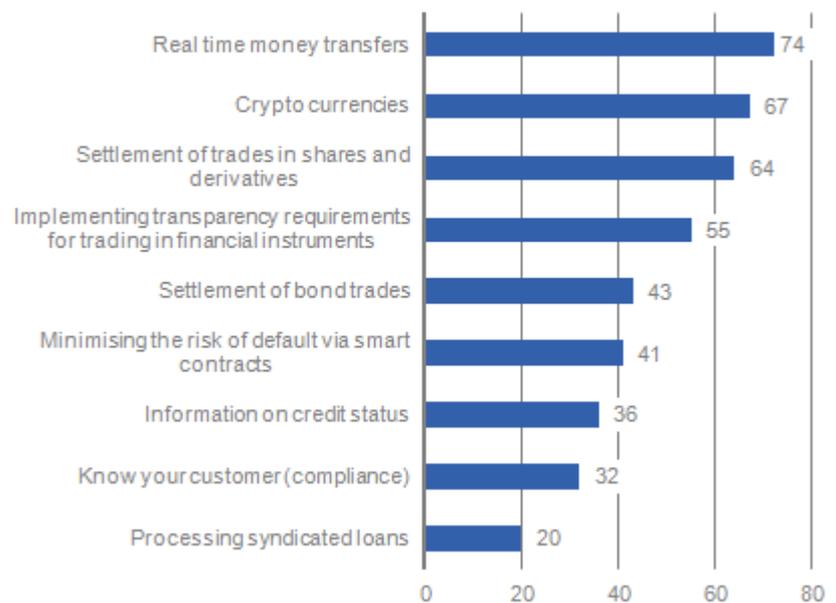
The key point about using a blockchain based on pure P2P mechanisms is that it eliminates intermediaries, spreading control across a large decentralised network of nodes and providing fundamental protection against manipulation and default. The modernisation projects and usage possibilities enabled by blockchain technologies are driven by the desire to increase the profitability of business models, processes or transactions through greater efficiency and thus to counter the enormous cost pressure triggered by digitisation. Since blockchain in its purest form is a decentralised information storage medium, it can be used wherever various types of transaction need to be checked and validated in near real time and protected against manipulation (Proof-of-work) – without expensive intermediaries.

Examples of such transactions include payment instructions, securities transactions, clearing and settlement processes, cryptocurrencies, transfers of property or copyrights, election processes, or the standardised and fully automated administration of contracts, such as a hire-purchase agreement for a car.

There are high expectations for the hotly debated peer-to-peer technology (P2P), both in the financial and insurance industries and in various other sectors. Even public administration authorities have recognised valuable potential for optimising their often outdated infrastructures and processes. For many market players, blockchain technology will only be of interest when its potential is no longer limited to cryptocurrencies and is extended to include applications such as the 'smart contract'. Digital contracts are considered to be 'smart' because the coding

Application potential of blockchain in the financial sector

% of respondents, multiple answers permitted (n=84)



Source: Cofinpro AG



contained in the transaction checks compliance with certain contractual rights and duties before automatically triggering certain standardised actions.

A German start-up is currently using blockchain logic to design modern infrastructure adapted to the needs of the digital age. Based on the concept of the sharing economy, things such as bikes and cars for hire, or apartments for rent via Airbnb are fitted with so-called smart locks that are organised via decentralised blockchain. The owner sets a price for the rental and the amount of any deposit required. Once the renter has paid the rental fee and the deposit, they can use their mobile device in near real time to open the smart lock. Ownership is verified by the digital exchange of cryptographic keys (public vs. private). The payment transactions (rent and repayment of the deposit) handled by the blockchain are also standardised and fully automated.

Public authorities are also considering how they might be able to benefit from the logic of blockchain. For example, the Honduran government is working with start-ups from the USA to explore the possibility of creating a land registry database based on blockchain technology. One conceivable scenario for this project might be the combination of decentralised and centralised databases. This would not be pure blockchain theory as envisaged by its inventor, a mysterious programmer by the name of Satoshi Nakamoto who carried out the first bitcoin transaction in the P2P network in 2009. Thanks to the way in which the transaction history is documented, this transaction is still verifiable today. This database variant would be more of a private blockchain with a limited group of users that makes use of many of the advantages of blockchain but is not a pure P2P mechanism in the classic sense. In the Honduran example, the centralised database would make sure the sensitive information that is necessary for a database of land ownership remains in the hands of the government, while the blockchain principle would protect the information contained in the registry entries from manipulation.

There are also discussions about changing the way democratic elections are run using the blockchain principle. Parties, candidates or policies are each given their own account in the distributed network. Every voter can select a candidate or manifesto using their 'digital vote' and then 'remit' their vote almost as if it were a kind of transaction. The P2P network checks the authenticity of the votes via proof-of-work, a combination of cryptography and mathematics, and updates the election results in near real time. Hours of sorting ballot papers and postal votes or waiting for projected results would be eliminated at a stroke. Of course this kind of digital voting via blockchain would have to guarantee that votes remain completely anonymous and cannot be traced back to individual voters, but that is merely a question of adequate anonymisation software.

The financial sector has set up innovation labs for this type of experiment where digital technologies, some of which are still in their infancy, can be examined for suitability and implementation potential. In addition, traditional banks are forming collaborative consortium trusts to work on solutions together, primarily on establishing the international standards that will be necessary to reach mass markets. Establishing international standards is an important and necessary step, especially in times of

- * shorter product lifecycles,
- * ever more rapid technological advances,
- * cross-sectoral developments in the area of the Internet of Things and

Hurdles facing blockchain

% of respondents, multiple answers permitted (n=84)



Source: Cofinpro AG

- a wave of platformisation through technology-driven digital eco systems that are increasingly determining the pace of innovation in the digital world.

There is a wide range of potential applications for blockchain technology, although the technology itself is currently at a very early stage of development. In a democratic state, digital technologies do not develop in a vacuum. This means that ultimately, the question of whether the technology becomes established is not left exclusively to market forces. Regulation will play a fundamental role in the implementation of digital technologies, albeit with a certain time delay. It is unlikely that any public sector infrastructure will be replaced by blockchain or a variant based on blockchain technology any time soon. Such system changes are generally designed to be in place for a long time and must therefore consider all eventualities and be well thought out. So whether, in the case of Honduras, the planned land register project will actually result in a valid transaction process that is acceptable to all stakeholders and whether we in future will be able to vote digitally via blockchain will require not just time, but also political and/or regulatory will and the acceptance of users.

However, regardless of political hurdles, this kind of open-minded willingness to experiment by trial and error is precisely the approach we need to be taking in all sectors to assess the risks and opportunities of digital technologies so that they can be channelled in the appropriate direction within the appropriate legal framework. This is the only way for national economies to experience a real leap forward in innovation. It is the only way to boost the innovative power and the growth potential of national economies in the digital age.

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[Fintech #4](#)

[Fintech #3](#)

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Details about the opportunities and risks of "Big Data" can be found here.

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