

Blockchain in Bank – Advantages and Risks

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Blockchain – the essence, advantages and drawbacks

A blockchain is quite literally like a giant spreadsheet for registering all assets, and an accounting system for transacting them on a global scale that can include all forms of assets held by all parties worldwide.

Thus, the **blockchain can be used for any form of asset registry**, inventory, and exchange, including every area of finance, economics, and money; hard assets (physical property); and intangible assets (votes, ideas, reputation, intention, health data, etc).

Melanie Swan. Blockchain: Blueprint for a New Economy (2015)

Advantages

- Database Transparency and availability
- Protection of information from forgery
- Built-in error tolerance
- Lack of centralized control and points of failure
- Simplification of procedures for clients of banks, reduction of time for clearing and settlements
- Reducing the operating costs of banks, costs of human participation in transaction approval and dispute resolution

Drawbacks

- High energy intensity technology
- Decrease transaction speed with increasing number of nodes
- The difficulty of correcting erroneous transactions
- Lack of regulatory standards
- Exposure to information security threats
- Lack of positive image

- ✓ **2015 – creation by the largest world banks consortium on the base of R3 company, which is engaged in the development of blockchain application in financial sector**
- ✓ **December 2015 – start of Sberbank's blockchain development project to work with the account on the basis of a power of attorney – its issuance, revocation and search (Blockchain Ethereum platform)**
- ✓ **November 2016 – the conclusion of a smart contract (on blockchain platform) between Brighann Cotton US and Brighann Cotton Australia for the supply of 88 bales of cotton with the support of Wells Fargo and Commonwealth Bank of Australia**
- ✓ **March 2017 – Banco Santander launches the first international transfer service based on blockchain (Santander One Pay FX). The first to access the service were private clients in Spain, the UK, Brazil and Poland**
- ✓ **April 2018 – issue of the first blockchain-based loan in the world (Spain BBVA)**
- ✓ **November 2018 – issue of the first blockchain-based syndicated loan in the world (Spain BBVA, Japan MUFG, France BNP Paribas, amount – USD 150 million, recipient – Red Electrica, blockchain – private, registration of the contract on Blockchain Ethereum platform)**

Blockchain regulation in Belarus

Decree of the President of the Republic of Belarus of December 21, 2017 No. 8 «On the Development of the Digital Economy»

Terms:

Register of transaction blocks (blockchain) – built on the basis of specified algorithms in a distributed decentralized information system using a cryptographic method of protecting information, a sequence of blocks with information about operations performed in such a system

Digital sign (token) – an entry in the blockchain, another distributed information system that certifies that the owner of the token has rights to objects of civil rights and (or) is a cryptocurrency

Virtual wallet – software or software and hardware designed for storing tokens and allowing its owner to carry out operations with them

Cryptocurrency – Bitcoin, another token used in international circulation as a universal means of exchange

Mining – is an activity different from creating your own tokens, aimed at ensuring the functioning of the blockchain by creating in this register new blocks with information on completed operations

Smart contract – is a program code intended for functioning in the blockchain, another distributed information system for the purpose of automated execution and (or) execution of transactions or other legally significant actions

Blockchain regulation in Belarus

Decree of the President of the Republic of Belarus of December 21, 2017 No. 8 «On the Development of the Digital Economy»

- ❑ **Creation of conditions for the introduction into the economy of the Republic of Belarus of the blockchain technology, other technologies based on the principles of distribution, decentralization and security of operations performed with their use**
- ❑ **Determination of rights to possession of legal entities and individuals and performing transactions with them** (*creating / mining / issuing ICO and placing tokens in Belarus and abroad, making transactions (operations) for the purchase, alienation of tokens for BYN, foreign currency, electronic money, exchange, donation and testament*)
- ❑ **Granting privileges and preferences to participants of relations connected with the use of modern technologies** (*taxation, currency legislation, securities, accounting, information protection, bankruptcy*)
- ❑ **Taking measures to improve the legal protection of participants in relations connected with the use of modern financial technologies** (*control by banks in the area of AML / CFT over the activities of customers, including cryptocurrency operators and cryptocurrency exchange, measures to ensure technological security*)
- ❑ **Conducting a legal experiment in the framework of the High-Tech Park to test new legal institutions for the possibility of their implementation in the civil legislation of the Republic of Belarus** (*convertible loan, option to conclude a contract, smart contract, non-competition agreement, option contract*)

Blockchain regulation in Belarus

Accounting regulation

National Accounting Standard

«Digital signs (tokens)»

(Ministry of Finance RB Resol.

№ 16 dated 03.03.2018)

Assigning tokens to long-term, short-term financial investments, goods or finished products (depending on origin), creating reserves for cost reduction

AML / CFT regulation

NBRB Instruction on requirements for internal control rules for banks in the area of AML / CFT

(NBRB Resol. dated December 24, 2014 No. 818, changed 02.02.2018 No. 62)

Increasing risk factor for client profile: crypto platform and cryptocurrency exchange operators

Increasing risk factor by type of transaction: systematic bank customer purchase and sale transactions of tokens

Creating a cryptocurrency exchange

January 2019: Registration in the HTP the first in the CIS regulated cryptocurrency exchange - Company Currency.com

(Investors - VP Capital, Victor Prokopenia and Larnabel Ventures, Said Gutseriev)

Services: cryptocurrency exchange / Fiat, ICO (initial offering) and TSO (tokenised securities offering).

Plans: issue over 10,000 TSO, use for investment of USD, BYN, RUB, Bitcoin, broadcast, access to tokens of over 150 types.

HTP regulation, annual external audit

Capacity for regulatory development

Requirements for founders of cryptoplatform and crypto-exchangers operators, professional participants of cryptomarket

Origin, reliability

Financial condition

Information Security

Information disclosure

Blockchain in Belarusian banks

As is

- In the Republic of Belarus from 11.04.2017 for the first time in the CIS began work in the **public domain Register of bank guarantees** (*NBRB Resol. dated 11.01.2017 № 12*)
- 15.07.2017 The NBRB launched **the first blockchain in the banking system of RB**, defined the general principles of its regulation and functioning (*NBRB Resol. dated 14.07.2017 No. 280*)
Blockchain Administrator – BIBSC, management and development - Council of nodes. Any RB bank or NCFO can become the owner of the blockchain's certification node (the first were NBRB, NCFO ERIP, BCSE, Bank BelVEB and BPS-Sberbank)
- The **first practical use of the blockchain in banks** is to use information on the issued bank guarantee and the guarantee itself to be transferred to the **Register** (*NBRB Resol. dated 07.07.2017 № 279*)
- 21.01.2019 **the first bank guarantee** in electronic form was issued **using the blockchain** in favor of NCFO ERIP. Principal banks: Bank Moscow-Minsk and Bank VTB (Belarus), guarantor banks: BTA Bank and Belinvestbank

As to be

- Bank **guarantees** in favor of **customs authorities**
- Registration by the public notary of property rights and transactions with financial and non-financial assets, interaction of banks with it for imposing electronically in the form of an executive inscription under problem loan agreements (**electronic notary**)
- Formation of BCSE **securities registry** on the stock exchange and over-the-counter markets
- Introducing **smart contracts** (registration of loan agreements concluded in the DBSS, and other transactions)
- Participation in the blockchain platform for transferring financial **messages in SWIFT format within the EAEU** (RF, Masterchain?)

Blockchain risks

- ❑ **Cyber risks**
Cyber attacks, other IT risks
- ❑ **AML / CFT Risks**
Anonymity. FATF control over cryptocurrency turnover, sanctions against users of crypto-exchange (ex: Binance /RB, November 2018)
- ❑ **Fraud risk**
Attracting funds from investors under a deliberately unrealizable project, imaginary and pretended deals
- ❑ **The risk of the speculative nature of transactions with tokens**
Lack of a clear and understandable mechanism for setting their price, proper guarantees for the protection of the rights and legitimate interests of holders of tokens, in particular, for the settlement of obligations to them
- ❑ **Counterparty risk**
AAA stock tokens - risk to a Belarusian crypto-exchange without rating, notaries - client incapacity risk
- ❑ **Smart Contract Legal Risk**
Conflicts with common law, control over the compliance of a smart contract with the agreed terms
- ❑ **Risk of loss of income due to lower cost of cross-border operations**
Negative impact on profits and capital. The share of commission income of banks in Switzerland - 50%, Italy, Canada, Israel - 35% (Moody's)
- ❑ **The risk of new technology**
Blockchain is a possible source of a large number of disruptions in conducting cross-border operations, especially for banks with a significant share of such operations – in Great Britain, Belgium, Switzerland (Moody's)
- ❑ **Regulatory risks**
Regulatory uncertainty...
- ❑

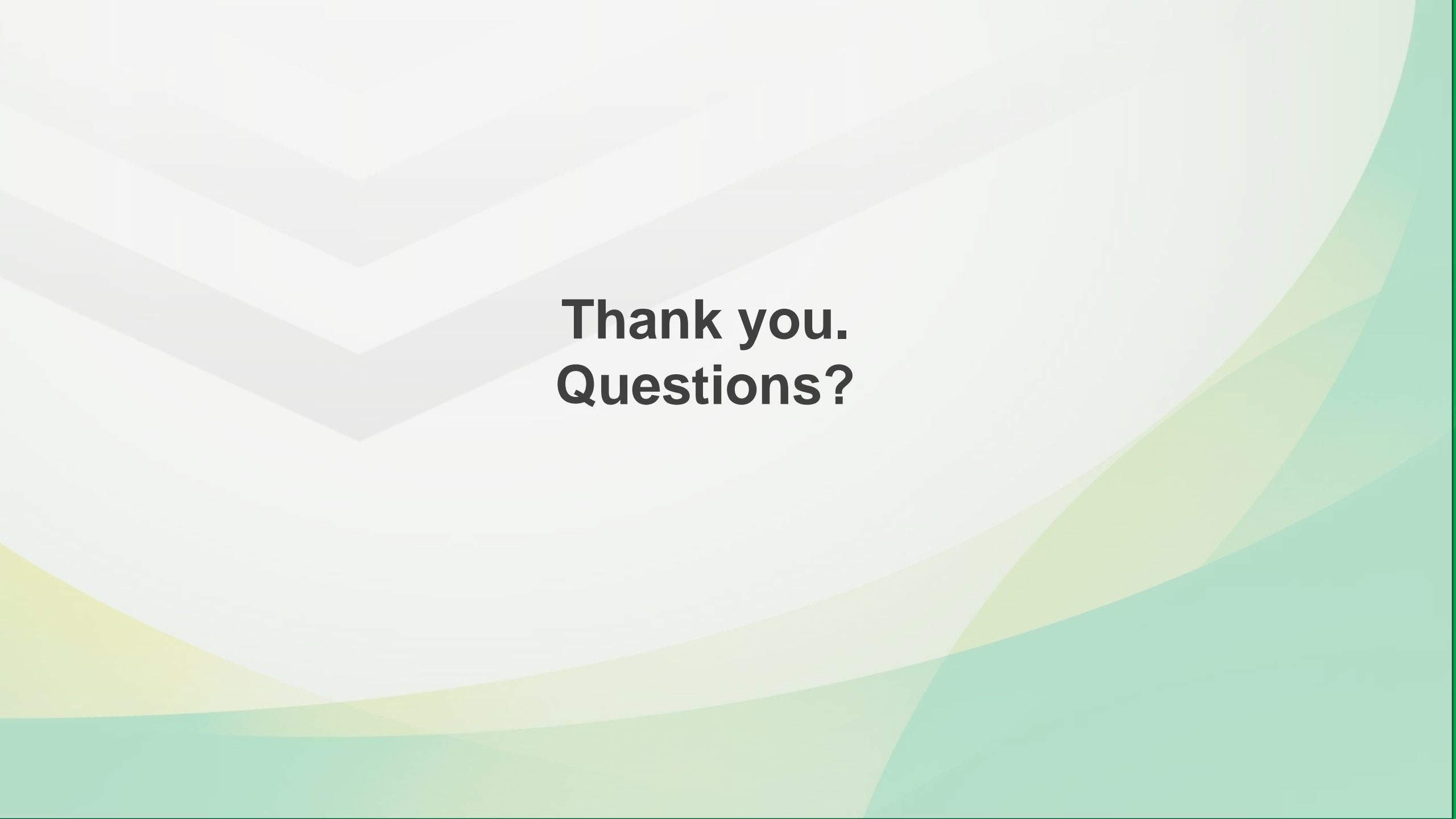
Blockchain risk reduction tools

- ❑ Rejection to take risks (*Vasa effect*)

*Afraid of storms and risk - do not
come close to the sea*



- ❑ Identification of cyber risk (type of OR) and its inclusion in the RMS (*governing bodies, organizational structure, authority and responsibility, local acts, management process, ICAAP, stress test, crisis plan, management reporting, FinCERT*)
- ❑ The inclusion of blockchain risk control (AML / CFT) in ICS (*risk factor, know your client KYC, self-assessment of the bank's involvement in suspicious transactions*)
- ❑ Development of international and national standards for the blockchain regulation
- ❑ ...



**Thank you.
Questions?**