

ABHAY PADDA,  
SUBJECT MATTER EXPERT,  
RESEARCH & ANALYTICS

# HOW WILL BLOCKCHAIN REVOLUTIONIZE THE GLOBAL FINANCIAL SYSTEM?



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“*The Internet of Everything needs a Ledger of Everything.*”

- Harvard Business Review on Blockchain

Blockchain, the technology that has supported the much-hyped bitcoin ecosystem, has piqued the interest of the financial sector. The industry that witnesses millions of transactions worth trillions of dollars every day is now beginning to experiment with blockchain to see how the '*decentralized ledger of all transactions across the network*' concept can be leveraged to transform the global financial system.

Blockchain is billed as a tamper-proof technology that can run simultaneously on millions of devices across a network, making it failure-tolerant as well. The technology uses 'smart contracts' to automate the recording and execution of transactions, with the potential to drive down processing costs significantly.

Here are the basic principles underlying blockchain.

- **Decentralized Ledger:**

Blockchain is essentially a digital ledger where every transaction is updated simultaneously across all nodes as a new 'block.' This allows participants to access identical information at the same time across the distribution chain

- **Consensus Validation:** For any transaction to be added to the blockchain, it needs to undergo an agreed upon validation process. This allows participants to place trust in their transactions even in the absence of a central authority

- **Immutable and Tamper-proof:** Only verified transactions are added to the chain. Transactions

once recorded in the blockchain are irreversible and immutable. Thus, it is impossible for anyone to tamper with data without leaving evidence of the same

- **User Authentication with**

**Cryptographic Security:** Each user with access to a blockchain is issued two cryptographic keys — private and public. The private key is used for 'write' access, while only the public key is exposed to other nodes to help verify requester details. This cryptographic security of user access makes it almost impossible for identities to be hacked and data to be compromised

- **Smart Contracts:** Blockchain transactions are programmed through smart contracts that encode all the commercial and

regulatory rules that need to be enforced. Transactions between nodes can thus be triggered once all the conditions have been met. For example, the receipt of a required set of documents confirming the acceptance of credit terms can

trigger the release of a loan to a customer

The inefficiencies and loopholes ailing the financial services industry stem from the growing complexities of distribution, disparate regulations covering

international transactions and delay in sharing transaction details across participating agencies. Let us analyze the leading use cases for how blockchain can address these issues across stock markets, retail banking, asset management and insurance.



## Quicker Settlements in Stock Markets

According to the World Federation of Exchanges database, the total value of stocks traded globally is around USD 77.5 Trillion,<sup>1</sup> and the market is getting bigger and more complex by the day. With transaction time and operational costs being a top concern, major stock exchanges are exploring blockchain for its potential to allow almost immediate settlements and automate compliance through smart contracts, with greater levels of security and transparency.

Another key impact of blockchain on the stock market is likely to be the democratization of trading. With decentralization, the correlation between distance from the stock exchange and entry price is reduced, thus making the proximity to exchange servers irrelevant. This will reduce the need for market intermediaries, lower transaction costs and introduce transparency in the share settlement process.

NASDAQ is already using blockchain technology to issue and manage private securities, while the London Stock Exchange is exploring opportunities with a cross-industry group of institutions to change the way securities are traded in Europe. Other exchanges such as the Tokyo Stock Exchange, South Korea Stock Exchange and the National Stock Exchange of India are also looking into the potential benefits of blockchain.



1. <https://data.worldbank.org/indicator/CM.MKT.TRAD.CD>



## Simplifying Payments in Banking

A decentralized ledger can simplify payments in retail banks, particularly international payments that involve high fees and several days to complete. Blockchain can also be used to verify customers' identities in retail banking. Once customers' personal data is verified by an authorized agency, they can

be issued private and public keys for the blockchain. The ledger then functions as a decentralized and common mechanism to authenticate a customer's identity across banks.

Switzerland-based UBS bank has been leading a consortium of global financial companies in a blockchain

project aimed at expediting back-office functions and inter-bank settlements, which could save the industry billions of dollars.<sup>2</sup> R3 CEV LLC, a New York-based company, leads the world's largest financial consortium focused on blockchain, including more than 100 banks and regulators.<sup>3</sup>



## Increased Accuracy in Asset Management

The asset management industry has been growing rapidly over the last few decades and is expected to touch USD 145.4 Trillion by 2025.<sup>4</sup> To meet investors' demands for a global set of products, the industry uses intermediaries, making the process complex and time-consuming. The distributed ledger concept can enable direct trading and settlements across boundaries, which in turn can reduce costs,

increase data accuracy and reduce delays.

FundsDLT, a blockchain-powered funds distribution platform, has been developed as a collaboration between Luxembourg Stock Exchange subsidiary Fundsquare, Post Group subsidiary InTech and KPMG Luxembourg. Using smart contracts and distributed ledger concepts, FundsDLT is expected to

provide asset managers a new distribution channel with significantly lower transaction costs and delays.<sup>5</sup> Fundsquare is also partnering with iHub, the innovation and hacker space for technologists, investors and tech companies, to introduce a blockchain-based Know Your Customer platform for the funds industry that is eventually expected to be integrated with FundsDLT.<sup>6</sup>

2. <http://fortune.com/2016/08/24/ubs-central-banks-blockchain/>

3. <https://www.reuters.com/article/us-r3-blockchain/bank-backed-r3-launches-new-version-of-its-blockchain-idUSKCN1C80MS>

4. <https://press.pwc.com/News-releases/global-assets-under-management-set-to-rise-to-145.4-trillion-by-2025/s/e236a113-5115-4421-9c75-77191733f15f>

5. <http://www.cityam.com/267970/blockchain-warming-up-asset-manager-natixis-says-has-made>

6. [http://www.asstservicingtimes.com/assetservicesnews/article.php?article\\_id=7831](http://www.asstservicingtimes.com/assetservicesnews/article.php?article_id=7831)



## Fraud-free Claims Management in Insurance

The insurance industry, although slower than the banking sector in evaluating the benefits of blockchain, has been making steady progress to benefit from it. The strongest use cases for blockchain in insurance are:

- **Driving effective and fraud-free claims management:**

Automating claims triage and processing through smart contracts, easy access to customer history, as well as centralized customer authentication will all enhance claims efficiencies manifold. Cross-industry data sharing will enable proactive fraud prevention

- **Supporting digital**

**transformation:** Blockchain will offer actuaries access to completely digitized, contextual data, to significantly reduce the effort and enhance the accuracy of risk models and estimations

- **Enabling product innovation:**

Blockchain, with its potential for almost real-time transaction settlements, will allow insurers to introduce new risk instruments and exploit capital opportunities in the market. Allianz, a leading multiline global insurer, recently came out with a blockchain-enabled solution for the captive insurance market. The company is also exploring other blockchain opportunities in the corporate

insurance segment.<sup>7</sup> Smart contracts stored on blockchain's decentralized ledgers help in supporting peer-to-peer transmissions. This opens up the opportunity for other forms of customized insurance products

Recently, consulting firm Deloitte, payment services provider, Lemon Way, and blockchain start-up, Stratumn, developed a blockchain-enabled solution for micro-insurance called LenderBot.<sup>8</sup> Stratumn and Deloitte have also tied up with 14 insurance companies under the French Federation of Insurers to test a blockchain platform that can enable sharing of information across insurance companies.<sup>9</sup>



7. <https://bravenewcoin.com/news/lenderbot-by-deloitte-and-stratumn-to-bring-insurance-to-the-sharing-economy-using-bitcoins-blockchain/>

8. <https://www.coinspeaker.com/2017/11/10/stratumn-teams-deloitte-test-blockchain-platform-14-insurance-companies-france/>

9. <http://www.agcs.allianz.com/about-us/news/blockchain-prototype-captive-insurance-press-release/>





## The Regulatory Question

The financial services industry is a highly regulated one, and the pace of blockchain adoption will depend on how the changes are supported by regulatory bodies across the globe. Some regulations connected to blockchain are already in force as listed below:

- The U.S. state of Delaware has passed a bill that recognizes stock trading using blockchain
- The Australian Securities and Investment Commission regulatory framework mandates financial services companies using distributed ledger technology to have proper infrastructure and risk

management systems in place in order to operate

- U.S. regulator, Commodity Futures Trading Commission, has established a blockchain panel to examine how the technology can be used in the derivatives market
- The European Securities Market Authority and the Financial Conduct Authority, U.K., have each published papers that discuss the risks and benefits of blockchain on the securities markets
- Switzerland's Zug region is now known as 'Crypto Valley' for its cryptocurrency-friendly

regulation. Switzerland is marketing itself as an epicenter for Initial Coin Offerings or ICOs

Changing global scenarios and volatile financial markets need a technology like blockchain to increase international transaction speed and reduce costs. By 2020, blockchain is expected to have a significant impact on the financial sector worldwide with widespread adoption. Blockchain is not a threat to the sector, but an innovation that can revolutionize the current system and make it more secure and efficient. Companies should start exploring and investing in this technology to compete in a disruptive environment.



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