

## Blockchain: Pervasive and Growing

By Mohamed Rajraji, Dynanet Corporation Senior Director of Technology

The technology behind Bitcoin is generating fanfare and shifting exchange of value paradigm. Financial services actors were the first to be enthusiastic about blockchain and continue to forward this technology. According to IBM, 66% of banks around the world will use blockchain by 2021. However, this trend becomes contagious to other industries in many areas, prompting them to consider blockchain as a viable alternative to some existing technologies. So, how did blockchain start?

### ***It all started from a 9 page paper by a mysterious person (or a group).***

Blockchain took root in November 2008 when Satoshi Nakamoto published a whitepaper titled “Bitcoin: A Peer-to-Peer Electronic Cash System.” The paper introduced the Bitcoin protocol and the basis for a new economic structure. It also described a creative method to store value in a completely digital form. Soon, Satoshi mined the first bitcoin in early 2009, marking the birth of the first blockchain. Six years later, the second-generation emerged when Vitalik Buterin launched Ethereum. And with that, blockchains became capable of tracking other things besides cryptocurrencies. These second-generation platforms host decentralized applications (or Dapps), also run smart contracts. Smart contracts, simplify put, are computer programs to automate transactions and contract execution.

### ***So, what is a blockchain, anyway?***

A blockchain is a distributed and immutable ledger of data that transfers value transparently and securely, thanks to cryptography and intelligent consensus mechanisms between participants. To further explain the notion of a transaction, let us consider a simple scenario: Carol wants to transfer digital currency to Dan. For simplicity in this particular scenario, I am going to talk about the transfer of value from the perspective of Bitcoin.

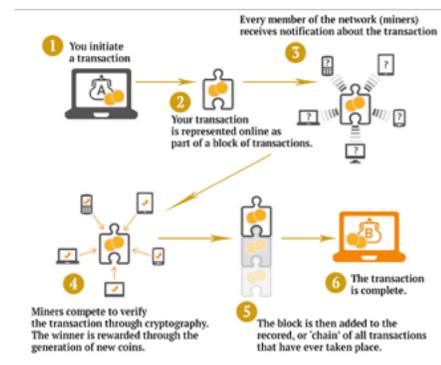
1. Carol submits her transaction request to all network participants (nodes).
2. The nodes verify and place her transaction in a waiting area (mempool).
3. A subgroup of nodes in the network called miners pick out her transaction and include it in a block. A block in this case is a structure containing unconfirmed transactions.
4. The miners race to resolve a difficult mathematical problem.
5. The first miner to solve the puzzle will append the block that contains Carol’s transaction to the chain.
6. The transaction becomes visible to Dan and to the entire network.

This example is further illustrated in **Figure 1: Blockchain Transaction Lifecycle**.

However, blockchain has a much wider application than digital currency. It could be used to transfer assets and to ensure better traceability of assets and products. In theory, blockchains could replace most trusted third parties such as banks.

### ***How to start your blockchain journey?***

Before embarking on your journey, there are essential aspects to consider, including:



Source: Digital Gold Club

Figure 1: Blockchain Transaction Lifecycle

- a. Ensure your team is focused on real problems that need resolution versus looking at a solution and trying to determine what may have created the problem.
- b. Involve participation from all levels of the organization. For example, representation should come from across the value chain to include C-suite, production, operations, marketing, to name just a few.
- c. Identify intermediaries that could be replaced with blockchain technologies that can reduce costs and increase customer engagement, without compromising quality, product, or service.
- d. Review your value chain. Identify where trust and transparency are relevant and driving business results. Discuss whether the level of trust via intermediaries or end customers could be fortified by the inclusion of external factors for validation following a 'shared for truth' model.
- e. Lastly, identify a small pilot project to get the teams familiar with the process to complete the exercise using a real-world example.

***What's the future of blockchain?***

Blockchain isn't a household buzzword. There is strong possibility the technology will impact your business. Blockchain is transforming entire industries, including supply chain, digital identity, healthcare, cybersecurity, to name just a few. Moreover, this trend is expected to hold for the coming years. According to Deloitte's 2019 Global Blockchain Survey, "53 percent of respondents say that blockchain technology has become a critical priority for their organizations in 2019—a 10-point increase over last year" and "83 percent see compelling use cases for blockchain, up from 74 percent." So, are you ready to begin your blockchain journey?

***About the Author:*** Mohamed Rajraji, Dynanet Senior Director of Technology, is a strategic thinker and IT leader, driven to excel through rapid consumption of new technology capabilities, continuous team motivation, and collaborative work with technical and functional stakeholders. Strong advocate for continual technology and business transformation—passionate in driving innovation, building viable business cases for modernizing IT infrastructures and practices.

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