

# Exploring the Potentials of Blockchain Technology: A Game-Changer in the Digital World

By Luqman Lawal, Nov 11, 2023

## What is Blockchain Technology?

In the past years, the term “blockchain technology” referred to cryptocurrencies like Bitcoin. [Blockchain](#) is an encrypted, distributed database that records data, or a digital ledger for any transactions, or contracts used in the digital world, and independently recorded.



Image Source: Unsplash.com

The best part of Blockchain is that it is a digital ledger accessible over millions of computers, and not bound to be in a single position. Blockchain is creating loads of disturbances in the financial industries, digital technology for a digital currency, and Bitcoin transactions.

Since Blockchain technology is in the financial industry, you can transact over the Internet without the input of any third party. These transactions can't share any of your details. One outstanding performance of Blockchain is that it causes no data breaches in contrast with the traditional processes.

With its ability to resist fraud, it holds the potential to transform many business sectors and make your processes smarter, assured, crystal clear, and well-organized compared to traditional business processes.

## How Popular Is Blockchain?

Blockchain is gaining popularity day by day as it is a digital ledger you can use in any transaction. In the business industry, keeping data and transactions is important, as information is handled within or through a third party such as bankers, managers, and brokers, to mention a few, increasing cost and time on the business. On its part, all these long processes are put away by the Blockchain as it is fast and saves a lot of time.

A large of several people use Blockchain and Bitcoin together, but, they are not the same. Since Blockchain is a technology that creates and supports many applications in multiple industries such as manufacturing, supply chain, and finance, to mention a few., Bitcoin, on its part, is a currency that uses Blockchain technology.

## Blockchain Decentralization & Transparency

Blockchain spreads data in a database to many network nodes such as systems or other devices running blockchain software at several locations. Not only does this create redundancy but keeps data trust. In relation, if you attempt to change a database record, the other nodes will stop it from coming up. In this way, no single node can change information within the network.

With the secured environment and its distribution, history and information are unchanged, and this can be a history of cryptocurrency transactions. But, a blockchain can secure a great amount of information such as a company's inventories, state identifications, and legal contracts, to mention a few.

As a decentralized technology, Blockchain transactions can be transparent, like using personal nodes or [blockchain explorers](#) which gives you the chance to see and know all your live transactions. Even so, each node comes with its copy of the updated chain as fresh and clean blocks get confirmed and created. With this, you can track any location of your Bitcoin.

Moreover, hackers have compromised transactions in the past leading to the loss of cryptocurrency. Hackers can be unknown, apart from their wallet address, tracing the extracted crypto is possible because the wallet addresses are published on the blockchain. The Blockchain secures records, allowing only the user to reveal the assigned address. In other words, blockchain users can be unknown.

## How secure is Blockchain?

Many users ask this question, but Blockchain technology decentralizes security and trust by storing new blocks. In simpler terms, the addition of new blocks to the end of the blockchain prevents the alteration of former blocks.

Whenever a change is made to the data, the hash of the block gets changed as well. Since each block has a former block's hash, altering one block will alter the following blocks. With the hashes not matching each other, the network would turn down an altered block.

Imagine if a hacker wants to steal cryptocurrency from a user, and creates the network nodes on the blockchain to alter it. If he altered the copy, he must convince other network nodes of the validity of their copy. He needs to take control of the majority of the network nodes to do this and insert the copy at the appropriate place.

As this attack is time-bound, the network nodes are possible to have moved away from the blocks he is trying to alter. The reason is that the rate at which these network nodes are is fast.

## Applications of Blockchain in many industries

Many industries, including Healthcare, Travel and Hospitality, Banking and Financial Services, Supply Chain, etc., use Blockchain technology.

### **1. Banking and Financial Services:**

In banking and financial services, Blockchain technology is used in many areas. It streamlines and breaks down the whole process relating to asset management and payments as it offers an auto-generated trade cycle all participants have access to the same data about a transaction. No need for a broker or a third party as it is transparent and effective.

However, Blockchain technology has added a lot of value to banking and financial services, since it is incorporated into business operations. Incorporating Blockchain technology into these industries enables transactions to occur within minutes or seconds. With this technology, banks and financial institutions have the chance to exchange funds with other institutions quickly and securely.

Also, Blockchain technology can reduce the number of days or weeks it will take stock traders to settle and clear their trading.

### **2. Healthcare:**

Blockchain technology is pivotal in the healthcare industry by increasing privacy, and security of healthcare data. It addresses many operational challenges in this sector, ensuring that shared data is secure and free from any breaches.

Creating and signing a medical record allows you to write it into the blockchain, instilling confidence that the data cannot be altered. Encoding and storing this data using a private key ensures that only designated individuals can access it, eliminating third-party interference and reducing overhead costs.

### **3. Supply Chain:**

Industries in the supply chain can utilize Blockchain technology to record and track the production of materials being bought and sold. It gives companies the verification and authentication they need in terms of their products.

According to Forbes, Blockchain technology is being adopted by the food industry to track and know the route and safety of food all through the [farm-to-user journey](#). Companies like IBM are adopting Blockchain technology to track and record their sales.

### **4. Smart Contracts:**

A smart contract is a computer code developed into the blockchain to enhance a contract agreement. Smart contracts operate within a set of terms and conditions to which the users agree. When those conditions are met, terms on the agreements are down automatically.

Let's say a potential tenant decides to lease an apartment using a smart contract, the landlord decides to give the tenant the door code to the apartment the moment the tenant pays the security deposit. After the tenant makes the payment, the smart contract will send the door code. Additionally, the code can automatically change if the rent is not paid or if all other conditions are not met

### **5. Travel and Hospitality:**

Blockchain has changed the way the [travel and hospitality industry](#) operates. You can use it for money transactions, booking flights, reserving hotels, storing important documents like passports and other identification cards, and managing travel insurance.

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### **6. Digital Voting:**

Blockchain technology can enhance digital voting as it will eliminate election fraud and voter apathy. With the use of blockchain in digital voting, votes can't be tampered with, as it will maintain transparency of the electoral process.

Blockchain technology will enable a reduction or decrease in the personnel required for an election, providing officials with immediate results.

### Benefits of Blockchain Technology

- More crystal-clear processes with detailed recordability and tracking
- Decentralised nature
- Reductions in cost
- Transparent in nature
- Time-bound due to real-time transaction processes
- Limited risks of fraud, cybercrimes, and tampering
- Direct transactions abolish the intermediary and overhead costs
- Secured and assured private transactions