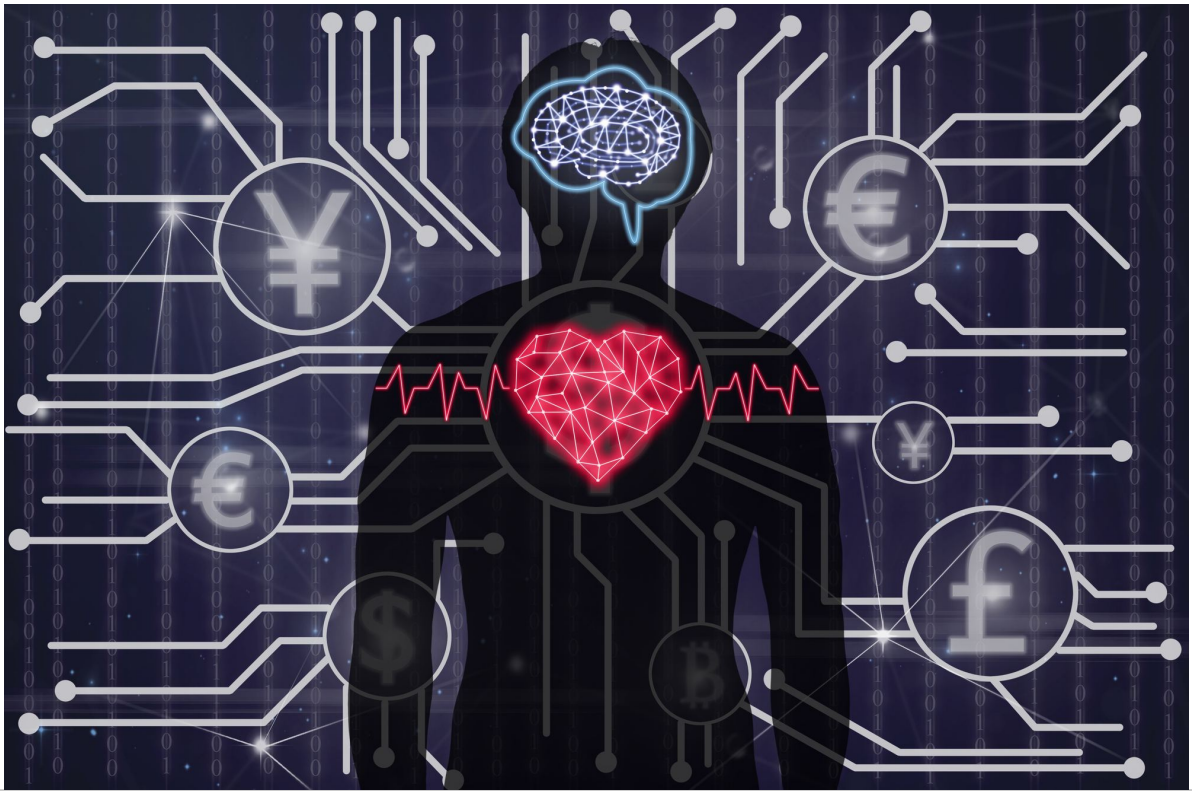
DH briefs

Blockchain in Healthcare

Decentralized Computing Changing the Industry



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About this research brief

This research brief provides an overview of blockchain technologies used to improve the healthcare industry. All figures quoted in this research brief are linked to the original source.

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Introduction

Blockchain is one of those buzz words you can hardly miss in the media these days. Yes, it was propelled to the public imagination with the rise of Bitcoin and other cryptocurrencies, but the technology can have many other **uses cases beyond moving money** from one side of the planet to the other.

In fact, it is now in minds of many tech giants and even governments which can clearly see blockchain's power to **transform how businesses operate** by decentralizing business models, creating more efficient processes, and providing a more secure and reliable way to exchange data.

Blockchain promises to decentralize business models, creating more efficient processes, and providing a more secure and reliable way to exchange data.

The healthcare industry is one of the sectors where blockchain can really prove its worth. For one thing, it can **reduce the liability and accuracy concerns** related to the exchange of medical data, while providing cryptographic security to protect patient identity "out of box." Eventually, every patient will have its own "data wallet" to store and manage his/her medical records, and provide third parties with access to that data when needed.

Beyond **health records**, the technology could also be used to automate many administrative tasks in healthcare, thus removing human errors in areas such as payment processing and claim adjudication, which in turn could lead to improved accuracy and reduced costs.

Another use case for blockchain is in the **supply chain management**, where a decentralized network could help medical supplier and pharmaceutical companies better track how their products are moving from the production facilities around the world to a local pharmacy and to the patient.

And that's just a start… In this research brief, we'll take a look at some of the use cases for blockchain in the healthcare space. As the possibilities of and interest in the technology grow, more companies will be jumping on the bandwagon, creating even **better solutions** some of which we may not be able to imagine today. And that, we think, is what the idea of progress is all about.

Blockchain Basics

In this section we'll be explaining the ins and outs of the blockchain technology. How it works, why it's working and why it has the potential to change the world for good.

We won't be going too much into tech details as there are many places around the web where you can get that information; nonetheless, we will try to make blockchain easier to understand. It is our hope that this information will help you get a better grasp of blockchain and what it offers to modern businesses and individuals, alike.

What is Blockchain?

Chances are that before you've heard of blockchain, you have heard of **Bitcoin**. The two are connected with the blockchain technology powering and supporting all cryptocurrencies, Bitcoin being one of them. Other popular cryptocurrencies include Ethereum, Litecoin, Monero, Bitcoin Cash and so on.

Blockchain is a shared distributed ledger technology (DLT) in which each transaction represents a ledger entry that is digitally signed to ensure its authenticity and integrity.

Ethereum is especially important as it was the one that introduced smart contracts, paving the way for decentralized application ("dapp") development and blockchain's business use cases. This feature has prompted many major organizations to take a better look at blockchain, which then led to the creation of the **Enterprise Ethereum Alliance** (EEA) that today includes members such as Accenture, Microsoft, JP Morgan, BP, BBVA, Intel, Thomson Reuters, Credit Suisse, UBS, Santander and many other giants from the software and finance industries.

In a nutshell, blockchain is a shared distributed ledger technology (DLT) in which each transaction represents a ledger entry that is digitally signed to ensure its authenticity and integrity. Here, we must add that by "transaction" we mean any **change of data**, extending blockchain's use cases extend beyond the ability to send money from one address to the other.

A group of transactions (changes of data) are stored in a block that is then added to the **chain of transactions** — hence the name "blockchain." More on how it works in a moment.

Before that we should add that this chain of blocks is distributed among a deployment or infrastructure, with additional nodes and layers in the infrastructure providing a **consensus** about the state of a transaction at any given second. Each node in this network has copies of the existing authenticated ledger distributed amongst them.