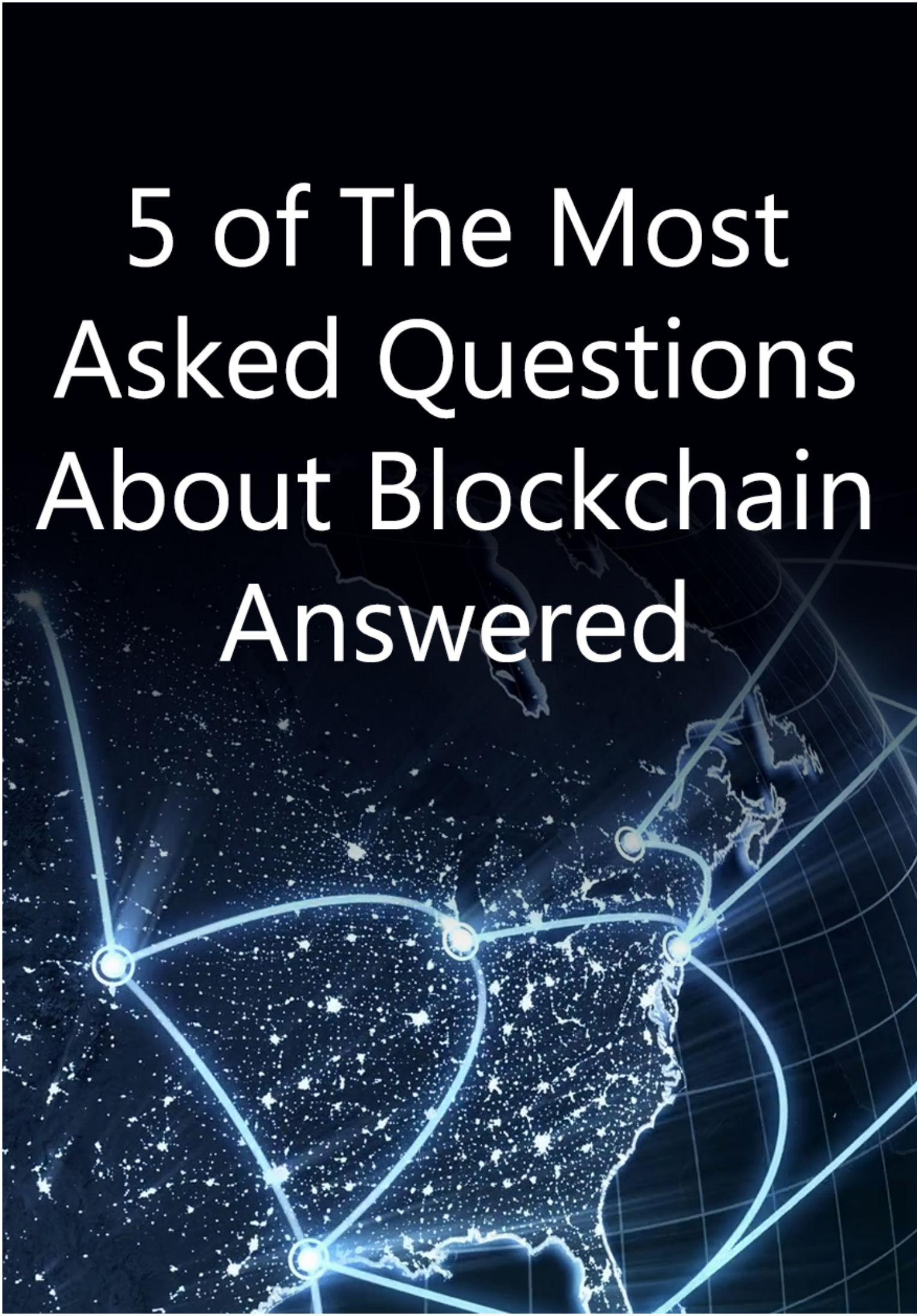
5 of The Most Asked Questions About Blockchain Answered



Introduction

In recent months, blockchain technology has dominated the news. However, if you're like many, you may not be able to wrap your head around what is being said completely. In fact, according to the latest surveys, blockchain is one of the most complex emerging technologies out there today. While it is still a relatively new technology, blockchain is one that could dramatically shape the way businesses, and marketers work in the not-so-distant future.

The blockchain was first defined in the source code for Bitcoin and is the underlying foundation for all cryptocurrency transactions. Bitcoin was invented in October 2008, when Satoshi Nakamoto published a white paper titled *Bitcoin: A Peer-to-Peer Electronic Cash System*. The code for blockchain was released as open source in January 2009. Over the last decade, blockchain, the technology that runs Bitcoin, has developed into one of today’s most significant, ground-breaking technologies with the potential to have a tremendous impact on every industry from financial to educational, to manufacturing.

Currently, Bitcoin is just one of the several hundred applications that utilize blockchain technology. It has been an impressive decade of transformation for the technology with no signs of it slowing down in the next ten years. If you are interested in learning more about what blockchain is, here are five of the most asked questions about the technology answered.

What is Blockchain?

The blockchain is merely a digital method of economic transaction record-keeping, or in layman's terms, it's a digital ledger. The thing that differentiates it from any other digital record-keeping system is its security. While the data recorded in blockchain can be viewed openly by everyone within a given network, no one is able to edit or delete existing records. You can think of it as a giant, shared public spreadsheet that can only be updated by solving a complex math problem. If a new file needs to be added to the blockchain, a complex mathematical problem must be resolved.

To solve the encryption, computing power is used where a machine uses it capabilities to mine for the answer to the

problem. If this concept sounds familiar, it might be due to the fact that you've heard the term "mining" before in a similar context.

Once the computer has discovered an answer to the encrypted problem, the solution is then verified by everyone on the network. If the answer is right, the new block, with all the transaction details and other new information is added to the ledger; a receipt is generated as proof, which is often in the form of a token or coin.

While there are various elements of blockchain technology that make it rather important, its two key capabilities are the recording of digital asset transfers that proves transactions took place and that ownership exists, and the inability to tamper with or overwrite its ledger.

Since the blockchain ledger is distributed to everyone within the network, even if one person manages to falsify a block, the technology keeps several copies of the correct version. This means that the technology can reject a false input like this because it recognizes that it doesn't match the other records in existence. This is what makes blockchain technology so unique. While it is entirely transparent, it is also kept altogether secure.

What's more, the public distribution of blockchain lends itself to the decentralization of the digital ledger. This means that there's not a core database that is vulnerable to attacks, which contributes to the technology's somewhat tamper-proof nature.

How Does Blockchain Work?

Instead than having a primary administrator like a traditional database, a digital ledger has a network of replicated databases that are synchronized through the Internet and visible to anyone on the system. Blockchain networks can be public, like the Internet, where everyone in the world has access to it, or they can be private, where there is a restricted membership that is similar to an Intranet.

When a digital transaction is completed, it is grouped together with other transactions that have occurred within the last ten minutes. They are grouped into a cryptographically protected block that is then sent out to the entire network. Miners are members of the system with high levels of computing power that compete to validate the transactions in the block by solving complex coded problems. The first miner to correctly answer the challenge

and confirm the block receives a reward, usually in the form of a coin or token.

After the block of transactions is validated, it is timestamped and added to the chain in linear, chronological order. New blocks that have been confirmed are then linked to the older blocks, forming a chain of blocks that show every recorded transaction made in the history of that particular blockchain. The entire chain is updated constantly so that all of the ledgers in the network is the same, giving each member of the blockchain network the ability to prove who owns what at any given time.

The decentralized, open, and cryptographic nature of blockchains allow members of the network to trust each other and make peer-to-peer transactions, effectively eliminating intermediaries. It also brings with it unprecedented security benefits.

Is Blockchain Technology Secure?

Through the use of hash functions and timestamps, blockchain has made it so that the data in the chain cannot be changed or tampered with once it has been verified. Since you can't overwrite the data in a blockchain, manipulating the data is impractical, ultimately securing the data and eliminating the centralized points that hackers and cybercriminals often target.

The key to blockchain's security is that any changes that are made to the database are immediately sent to all of the users to create a secure and established record. All the users on the network receive a copy of the data keeping the overall database safe and secure, even if a handful of network users are hacked.

By storing data and financial information across a network of computers, it becomes much more difficult for hackers to compromise data. Rather than having to breach a single server, making a fraudulent transaction or falsifying a balance on a blockchain can only be accomplished if the majority of the network is compromised. Hacking into a single server is extremely difficult, even for the most accomplished cybercriminals. Being able to compromise more than half of the servers to falsify records on the blockchain is practically impossible because for hackers to successfully change information in the blockchain, they

would need to breach each node in the chain simultaneously.

The decentralized and tamper-proof nature has made blockchain technology increasingly popular beyond its original intended function as a way to support digital bitcoin transactions and is starting to pique the interest of numerous industries that could utilize blockchain technology for their advantage.

What Are Some Other Applications for Blockchain?

There are several other applications for blockchain technology that don't involve recording bitcoin transactions. According to the Sally Davies, a reporter for the Financial Times, "Blockchain is to bitcoin, what the Internet is to email. A big electronic system, on top of which you can build applications. Currency is just one." Bitcoin is only one small application supported by blockchain. Blockchain technology is full of endless possibilities.

Payments and Cryptocurrencies

The most popular blockchain application is cryptocurrency because along with being the first application, it also has the most extensive network of users. In fact, Bitcoin has become so popular that restaurants, stores, and bars are starting to accept it as payment. It has also been used to cope with hyperinflation in Venezuela. The smart contract that is built into Ethereum's cryptocurrency allow for a variety of deals to occur automatically once pre-negotiated terms have been met.

Trade

The blockchain, as well as cryptocurrencies, will have a tremendous impact on business. The reduction or removal of transaction fees, faster verification times, and the elimination of errors will make international and domestic trade easier than ever.

Crowdfunding

Blockchain will dramatically change how startups and businesses raise capital. Kickstarter, one of the most popular fundraising sites allows just about anyone to find financial backing from a broad audience rather than through traditional means like venture capital funds and banks. They charge a five percent fee for using the service. With blockchain, these fees will be eliminated since the network allows for immediate verification and smart contracts allow

transactions to be completed only when a project is fully funded.

Property and Identity

Blockchain technology will become a digital fail-safe for all the essential documents that you need during your life, like birth records, marriage and death certificates, and proof of citizenship. In addition, blockchain can also be an extremely safe and secure identity management system. Being able to verify your identity accurately is essential for all online transactions, but the data can be vulnerable to attacks. The decentralized ledger of blockchain and the unique user address will make it more difficult for hackers to obtain access to your sensitive data.

Supply Chain

Thanks to blockchain and smart contracts, retailers are starting to use blockchain technology to help simplify their supply chain process. All parties in the supply chain can access the necessary documents on the blockchain and view transportation events in real time. Since no individual can alter the blockchain without permission from the others, the supply chain information is secure and accurate. The transparency of blockchain will reduce shipment times, fraud, money, and errors.

Healthcare

Blockchain technology will allow patients, physicians, and insurers to view and update medical records in a timely and secure manner. Physicians will also be able to recognize early indicators of disease or weakening health thanks to blockchain technology. Along with saving lives, blockchain will also be able to reduce Medicare fraud and even make it possible to pay for procedures based not on predetermined fees, but on outcomes instead.

How Can I Use Blockchain?

Blockchain technology's somewhat iron-clad ledger and security feature significantly underscore its potential benefits to businesses that transmit secure, sensitive data. However, because blockchain continues to be widely misunderstood, as well as being in its early stages of development, for the most part, the use cases for the technology remain niche in nature.

While it could be a time before blockchain becomes mainstream, there are certain areas where it can benefit and have an impact on small-to-midsized businesses (SMB).

An SMB that is concerned with tracking the movement of goods through the supply chain should pay closer attention to the improvements in blockchain technology. This is especially true for businesses where things like fair labor or environmental sustainability are involved.

Data storage for SMBs is one of the most significant potential use cases for the blockchain technology. Data storage is an area where the inability to easily modify ledger-based storage, makes blockchain technology superior to secure databases. This is especially true considering recent data breaches are looked upon as questionable.

Blockchain technology also shows strong potential in the area of password protocols. The blockchain is one of the top technologies to disrupt the current, fragmented systems of password management, the other being various biorecognition methods like digital fingerprinting and Face ID. If blockchain technology can successfully address the fragmented password management system and works to remedy the situation, SMBs may want to consider investing in the technology.

Conclusion

There is no doubt about it; blockchain technology is going to change consumer behavior regarding ownership and security. With the implementation of blockchain technology, consumers will feel much safer having a business own and manage their sensitive information. More and more businesses will feel pressured to shift ownership back to their customers and those that resist that change will be left behind.

As blockchain technology is still in its infancy, it will take many years before it becomes mainstream. However, it is essential to keep an eye on this emerging technology as more and more companies begin to develop more blockchain applications. While many believe that blockchain technology is just another fad that will disappear down the road, its wide-reaching applications will, in fact, change the world as we know it.