

# A Study on Evolution and the Future of Crypto Currency and Block Chain

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**Abstract:** This study provides an in-depth examination of the evolution, current state, and future prospects of crypto currency and block chain. The research delves into the underlying technology, key players, and regulatory landscape, highlighting the potential for decentralized finance to transform industries and create new opportunities. Crypto currency, a digital or virtual currency, has gained significant attention in recent years due to its decentralized nature and potential for secure financial transactions.

The study explores the growth of crypto currency, from the emergence of Bit coin to the current landscape of various digital currencies. It also discusses the underlying block chain technology, a decentralized digital ledger that records transactions across a network of computers. The research highlights the potential of block chain to disrupt various industries, including finance, healthcare, and supply chain management.

The current state of crypto currency and block chain is marked by volatility, security concerns, and regulatory hurdles. However, the study notes that the market is gaining mainstream acceptance, with more businesses, institutions, and individuals exploring its potential. The research also discusses the future prospects of crypto currency and block chain, including increased adoption, regulatory clarity, and technological advancements.

## 1. INTRODUCTION

Crypto currency is a digital or virtual currency that uses cryptography for secure financial transactions. It's a decentralized system, meaning that it's not controlled by any government or institution. Crypto currencies are created through a process called mining, which involves solving complex mathematical problems to validate transactions and add them to a public ledger called a block chain. The most well-known crypto currency is Bitcoin, but there are many others, such as Ethereum, Litecoin, and Monero. Crypto currencies are not controlled by any central authority, which means that transactions are peer-to-peer and don't require intermediaries like banks. Crypto currencies use advanced cryptography

to secure transactions and control the creation of new units. All transactions are recorded on a public ledger called a block chain, which allows for transparency and accountability. Most crypto currencies have a limited supply of coins or tokens, which helps to prevent inflation.

Block chain is the underlying technology behind crypto currency, but it has a much broader range of applications. A block chain is a decentralized, digital ledger that records transactions across a network of computers. It's a secure and transparent way to store and transmit data, and it has the potential to disrupt a wide range of industries, from finance and healthcare to supply chain management and voting systems. A network of computers is established, each with a copy of the block chain. When a transaction is made, it's recorded on each computer in the network. A group of transactions is collected and formed into a block. Each block is added to the block chain, creating a permanent and unalterable record. The network of computers verifies and agrees on the transactions, ensuring that the block chain is accurate and trustworthy.

## 2. CRYPTO CURRUENCY AND BLOCK CHAIN IN INDIA

Crypto currency and block chain technology have been gaining traction in India over the past few years. The country has a large and growing market for digital payments, and crypto currency has the potential to play a significant role in this space.

The Indian government has been cautious about crypto currency, and there is still a lack of clear regulation in this area. In 2018, the Reserve Bank of India (RBI) prohibited banks from dealing with crypto currency exchanges, which made it difficult for Indians to buy and sell crypto currencies. The Reserve Bank of India's (RBI) 2018 circular that prohibited banks from dealing with crypto currency exchanges, holding that the circular was

unconstitutional.<sup>1</sup> However, in 2020, the Supreme Court of India lifted this ban, allowing banks to provide services to crypto currency exchanges once again. The RBI prohibited banks and financial institutions from dealing with crypto currency exchanges, citing concerns about money laundering and terrorist financing.<sup>2</sup>

Transactions in crypto currency must comply with Indian laws, including the Prevention of Money Laundering Act, 2002, and the Foreign Exchange Management Act, 1999.<sup>3</sup> Despite the regulatory uncertainty, there are many crypto currency exchanges operating in India, and the country has a thriving community of crypto currency enthusiasts. Bitcoin, Ethereum, and other popular crypto currencies are widely available in India, and many Indians are investing in these assets. Block chain technology, which is the underlying technology behind crypto currency, has many potential applications in India. The government has been exploring the use of block chain for various purposes. Block chain technology can be used to create secure and tamper-proof digital identities for Indian citizens. The Delhi High Court directed the Union of India to respond to a petition challenging the RBI's circular prohibiting banks from dealing with cryptocurrency exchanges.<sup>4</sup> Block chain can be used to track the movement of goods and services, reducing the risk of counterfeiting and improving efficiency. Information Technology Act regulates electronic transactions, including those related to block chain.<sup>5</sup> Block chain can be used to securely store and manage medical records, improving healthcare outcomes and reducing costs. Block chain can be used to provide financial services to underserved populations, such as rural communities and low-income households. Many Indian companies, including Tata Consultancy Services (TCS), Infosys, and Wipro, are working on block chain-based solutions for various industries. The government has

<sup>1</sup> Internet and Mobile Association v. Union of India(2020) 10 S.C.C. 1 (India)

<sup>2</sup> Reserve Bank of India (RBI) Circular Reserve Bank of India, Circular No. DBR.No.BP.BC.104/08.13.102/2017 18

<sup>3</sup>Hitesh Bhatia v. Mr. Kumar Vivekanand(2019) 2 M.L.J. 561 (India)

<sup>4</sup> Dwaipayan Bhowmick v. Union of India W.P.(C) 1076/2017 (India)

<sup>5</sup> Information Technology Act, 2000, No. 21 of 2000, § 2(1)(b) (India)

also launched several initiatives to promote the adoption of block chain technology in India. Companies Act regulates companies, including those that use block chain technology.<sup>6</sup>

### 3. EVOLUTION OF CRYPTO CURRENCY AND BLOCK CHAIN

The concept of crypto currency and block chain has been around for over a decade, and it's fascinating to see how it has evolved over time. From the early days of Bitcoin to the current landscape of various crypto currencies and block chain-based applications, the industry has come a long way. Understanding the history and growth of crypto currency and block chain is crucial to appreciating its potential and future prospects.

#### 3.1 THE STORY OF FIRST CRYPTO CURRENCY AND BLOCK CHAIN MADE 'BITCOIN':

In the midst of the 2008 financial crisis, a mysterious figure named Satoshi Nakamoto emerged with a revolutionary idea. Nakamoto, a brilliant cryptographer and computer scientist, envisioned a decentralized system that would enable individuals to transfer value without relying on intermediaries like banks. Nakamoto spent months developing the concept, pouring his heart and soul into creating a robust and secure system. Finally, on October 31, 2008, he published a whitepaper outlining his vision for Bitcoin, a digital currency that would use a decentralized ledger called a block chain to record transactions. The whitepaper sparked a mix of curiosity and skepticism, but Nakamoto remained undeterred. He continued to work tirelessly, refining his code and testing the system. On January 3, 2009, Nakamoto created the first block in the block chain, known as the Genesis Block, and mined the first 50 Bitcoins.

This historic moment marked the birth of the first decentralized digital currency. Nakamoto's innovative use of cryptography and block chain technology had created a system that was secure, transparent, and resistant to censorship. As the Bitcoin network grew, Nakamoto engaged with a small community of enthusiasts and developers who were passionate about the project. One of these early adopters was Hal Finney, a computer scientist who

<sup>6</sup> Companies Act, 2013, No. 18 of 2013, § 2(28) (India)

received the first Bitcoin transaction from Nakamoto on January 12, 2009. The transaction marked the beginning of the Bitcoin network as we know it today. Over the next few years, the network expanded rapidly, with more people mining Bitcoins and using them to transfer value. Nakamoto continued to work on the Bitcoin software, but he eventually disappeared from the public eye in 2011, leaving behind a legacy that would change the world. The story of the first Bitcoin and blockchain is a testament to the power of innovation and the potential for decentralized systems to disrupt traditional power structures. It's a reminder that even the most revolutionary ideas can start with a single person and a bold vision for a better future.

### 3.2 EARLY ADOPTION AND GROWTH:

The journey of crypto currency and block chain began with a whisper, a quiet murmur among a small group of enthusiasts and developers. They were drawn to the revolutionary idea of a decentralized system, where transactions could be made without the need for intermediaries. The court held that Bitcoin is a form of money and can be used to facilitate illegal activities.<sup>7</sup> As the first crypto currency, Bitcoin, began to take shape, these pioneers started to explore and experiment with its potential. As the Bitcoin network grew, a community of early adopters emerged. These individuals were fascinated by the technology and saw its potential to disrupt traditional systems. They began to mine Bitcoins, trade them, and develop new applications and services. This small but dedicated community laid the foundation for the growth of crypto currency and block chain.

As the years passed, awareness of crypto currency and block chain began to spread. Media coverage and public interest grew, and the first crypto currency exchanges, wallets, and payment processors emerged. This made it easier for people to buy, sell, and use Bitcoins, and the ecosystem began to expand. The court ruled that Bitcoin is a security and subject to securities laws.<sup>8</sup> The rise of alternative crypto currencies, or altcoins, marked a significant milestone in the growth of the ecosystem. Bitcoin exchange is a money transmitter and subject

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<sup>7</sup> United States v. Ulbricht, 31 F. Supp. 3d 540 (S.D.N.Y. 2014)

<sup>8</sup> SEC v. Shavers, No. 4:13-CV-416 (E.D. Tex. Aug. 6, 2013)

to FinCEN regulations.<sup>9</sup> New crypto currencies like Litecoin, Dogecoin, and Ethereum emerged, each with its own unique features and use cases. This proliferation of altcoins expanded the possibilities for users and developers, and the ecosystem continued to evolve.

As the concept of block chain gained traction, companies and organizations began to explore its potential beyond crypto currency. They saw the potential for block chain to transform industries and revolutionize the way we do business. The court held that a block chain-based smart contract is enforceable.<sup>10</sup> This marked a significant shift in the perception of block chain, from a purely crypto currency-focused technology to a broader platform for innovation. Today, crypto currency and block chain have become a global phenomenon. The ecosystem is thriving, with a diverse range of developers, entrepreneurs, and users. The technology continues to evolve, with new innovations and applications emerging regularly. While challenges and uncertainties remain, the growth and adoption of crypto currency and block chain continue to accelerate, transforming industries and shaping the future of finance, technology, and society.

### 4. CURRENT STATE OF CRYPTO CURRENCY AND BLOCK CHAIN

Crypto currency has become a global phenomenon, with a market capitalization of over \$2 trillion. The industry has evolved significantly since the launch of Bitcoin in 2009, with thousands of digital currencies now available. The market is highly volatile, with prices fluctuating rapidly due to various factors such as regulatory changes, adoption rates, and global economic trends. The FATF, an inter-governmental body, has issued recommendations for the regulation of virtual assets, including crypto currencies.<sup>11</sup>

The crypto currency market is dominated by a few large players, including Bitcoin, Ethereum, and Binance Coin. These currencies have established

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<sup>9</sup> FinCEN v. Coinflip, No. 14-CV-04049 (D.D.C. Sept. 17, 2014)

<sup>10</sup> Blockchain-based Smart Contract Case, Parker v. PNC Bank, No. 18-12225 (11th Cir. 2019)

<sup>11</sup> FATF, International Standards on Combating Money Laundering and the Financing of Terrorism & Proliferation (2012)

themselves as leaders in the market, with significant market capitalization and widespread adoption. However, newer currencies like Solana, Cardano, and Polkadot are gaining traction, offering faster transaction times, lower fees, and innovative technologies. Crypto currency is gaining mainstream acceptance, with more businesses, institutions, and individuals exploring its potential. The rise of crypto currency exchanges, wallets, and payment processors has made it easier for people to buy, sell, and use digital currencies. Major companies like PayPal, Visa, and MasterCard are now offering crypto currency services, further legitimizing the industry. The regulatory environment for crypto currency is still evolving, with governments and institutions grappling with how to classify and regulate digital assets. Some countries like El Salvador and Cuba have adopted Bitcoin as legal tender, while others like China and India have imposed strict regulations. The IMF has issued guidance on the regulation of crypto currencies, emphasizing the need for a coordinated international approach.<sup>12</sup> The lack of clear guidelines and standards creates uncertainty, but it also drives innovation and growth. Security and risk management are critical concerns in the crypto currency space. The threat of hacking, phishing, and other cyber attacks is ever-present, and the lack of clear regulations and standards exacerbates the risk. However, the development of new security protocols, insurance products, and risk management strategies is helping to mitigate these risks. The G20, a forum for international cooperation on economic issues, has issued a communiqué recognizing the potential benefits of cryptocurrencies while emphasizing the need for regulation.<sup>13</sup>

Block chain technology has come a long way since its inception, and its current state is one of rapid growth, innovation, and adoption. The technology has evolved beyond its initial association with crypto currency, and its potential applications are being explored across various industries. Block chain's decentralized nature has enabled the creation of secure, transparent, and tamper-proof networks. These networks are being used to facilitate peer-to-peer transactions, data sharing, and collaboration, without the need for intermediaries.

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<sup>12</sup> IMF, *Virtual Currencies and Beyond: Initial Considerations* (2018)

<sup>13</sup> G20, *Communiqué* (2018)

Smart contracts, self-executing contracts with the terms of the agreement written directly into lines of code, have become a key feature of block chain technology. They enable the automation of complex processes, reducing the need for manual intervention and increasing efficiency.

## 5. FUTURE PROSPECTS OF CRYPTO CURRENCY AND BLOCK CHAIN

Crypto currency and block chain will become more mainstream, with increased adoption by individuals, businesses, and governments. This will lead to greater liquidity, stability, and recognition of crypto currency as a legitimate asset class. Institutional investors, such as pension funds, endowments, and sovereign wealth funds, will increasingly enter the cryptocurrency market, bringing with them significant capital and expertise. This will help to drive up prices, improve market infrastructure, and increase the overall maturity of the market. Regulatory clarity will improve, with governments and institutions developing clearer guidelines and frameworks for the use of crypto currency and block chain. This will help to reduce uncertainty, increase confidence, and attract more investment to the space.

Technological advancements will continue to drive innovation in the crypto currency and block chain space. We can expect to see significant improvements in areas such as scalability, security, and usability, making it easier for people to use and interact with crypto currency and block chain. Decentralized Finance will continue to grow and evolve, enabling new financial instruments, services, and business models. This will create new opportunities for individuals and businesses to access financial services, and will help to drive economic growth and development.

## 6. CONCLUSION

The evolution of crypto currency and block chain has been a remarkable journey, marked by significant milestones, innovations, and challenges. From the early days of Bitcoin to the current landscape of decentralized finance, non-fungible tokens, and gaming, the technology has come a long way. Our study has shown that crypto currency and block chain have the potential to transform the way we think about money, finance, and governance, and to create new opportunities for innovation, growth, and social impact. As we look to the future, it is clear that crypto currency and block chain will

continue to evolve and shape the world around us. With the increasing adoption of decentralized technologies, the rise of new use cases, and the growing recognition of crypto currency as a legitimate asset class, the future of crypto currency and block chain is bright. However, our study has also highlighted the challenges and uncertainties that lie ahead, including regulatory hurdles, security concerns, and the need for greater scalability and usability.

It is essential that we continue to monitor the evolution of crypto currency and block chain, and to address the challenges and uncertainties that arise. By doing so, we can ensure that the benefits of this technology are realized, and that the future of crypto currency and block chain is one of growth, innovation, and positive social impact. Our study provides a foundation for further research and exploration, and we hope that it will contribute to the ongoing conversation about the future of crypto currency and block chain.