# Blockchain Research

## Bitcoins, Cryptocurrency, and Distributed Ledgers

BY MARK POPIELARSKI

*"Blockchain technology is complex, but the idea is simple. At its most basic, blockchain is a vast, global distributed ledger or database running on millions of devices and open to anyone, where not just information but anything of value—money, titles, deeds, music, art, scientific discoveries, intellectual property, and even votes—can be moved and stored securely and privately. On the blockchain, trust is established, not by powerful intermediaries like banks, governments and technology companies, but through mass collaboration and clever code."*[1]

The rapid development and implementation of blockchain technology throughout the global economy has created many new opportunities for investing, purchasing goods and services, compensating employees, and streamlining business processes. However, like many technological developments that have occurred over the past several decades, the legal system has struggled to keep pace. This unsettled landscape has created unique challenges for attorneys tasked with advising clients on the many potential legal implications posed by the increased proliferation of virtual currencies and the repurposing of blockchain technology for other economic uses. This article explains this new technology, examines its legal and economic implications, and provides a roadmap for researching these issues.

### A New Field of Research Emerges

Cryptocurrencies, also known as virtual currencies, represent the most well-known and common use of blockchain technology. Most people have heard of Bitcoin, but it's just one of many existing virtual currencies, each of which possesses its own separate value and implementation. Because most virtual currencies are designed to keep their owners anonymous and are not tied to any government or its currency, monitoring and regulating cryptocurrencies has created numerous legal challenges. Virtual currencies have been used for the purchase and sale of illicit goods and services, money laundering, investment fraud, and tax evasion, and they have been subject to theft by questionable businesses and hackers.

The increased prevalence of these incidents has sparked many governments to enact or propose new legislation addressing different aspects of the virtual currency market and has prompted regulators to promulgate guidance and commence enforcement actions against individuals and businesses attempting to circumvent existing laws. At the same time, many governmental entities, businesses, and individuals are exploring ways to incorporate the underlying blockchain technology into new tools designed to streamline financial market transactions, secure new methods for satisfying contracts, manage government data, and even establish permanent identification systems for refugees and third-world countries. The rapidly evolving landscape in this area makes researching blockchain technology and advising clients about its potential implications

a fascinating, dynamic, and challenging prospect for attorneys.

### Overview of Blockchain Technology

Developed by an individual or entity calling itself "Satoshi Nakamoto," blockchain technology and virtual currencies first gained prominence following the Great Recession of 2008. Cryptocurrencies originally were intended to provide a decentralized, anonymous vehicle through which individuals or companies could transact business. As envisioned, the value of these virtual currencies would not be derived from the economic backing of any individual or block of countries (as is the case with fiat currencies[2]) and would bypass traditional financial intermediaries such as banks. Instead, these cryptocurrencies would derive monetary value from the significant time and computer power required to create an individual unit of the currency and demand for the relatively scarce units.

Also known as distributed ledgers, the blockchains that serve as the basis for these virtual currencies are created by leveraging the power of one or more computers to process complex computer logic puzzles that can ultimately result in one unit of a particular currency being created ("mined"). Mining virtual currencies usually requires a significant investment in computer processing power and time, which helps ensure that the currency's market does not become saturated. Once an entity "owns" a unit of the virtual currency, it may be exchanged or transferred to another party through the distributed ledger system.

A distributed ledger tracks the ownership and transfers of units of virtual currency. The transfers occur through a voluntary network of computers owned by many different parties. Each ledger possesses its own cryptographically protected copy of all transactions that have ever occurred for all units of that currency, and every copy of this ledger is updated to reflect changes in ownership. The high levels of encryption for the currencies and ledgers and the decentralized nature of record tracking have made cryptocurrencies particularly resistant to hacking attempts.

Since the inception of cryptocurrencies, many supporting technologies and services have emerged to support their ownership and transfer. Companies now offer virtual "e-wallets" designed to serve as an online storage account for the virtual currency holdings of individuals and entities, and cryptocurrency exchanges have emerged to facilitate the transfer of these currencies between parties.

Recognizing blockchain's potential utility for creating and maintaining cryptographically secured data and the potential ability to leverage the technology's decentralized characteristics to expedite common transactions, many governments and businesses are exploring new ways to use blockchains to prevent data breaches, create permanent records, and streamline common backend functions.

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### An Unsettled Legal Landscape

Legal growing pains often accompany the widespread adoption of cutting-edge technologies. The sudden explosion of cryptocurrencies, individuals and businesses that own them, and services supporting these virtual currencies has resulted in a proliferation of potential legal issues that attorneys, their clients, and governments are struggling to address. Currently, these legal considerations arise from securities registration and fraud, tax evasion, scams and theft, and use as compensation for illegal products and activities. Federal, state, and foreign governments have begun to investigate and develop strategies to deal with these issues.

#### *Federal Securities Issues*

While guidance addressing potential federal securities-related currently remains sparse, the Securities Exchange Commission (SEC)[3] and Commodity Futures Trading Commission (CFTC)[4] each declared that certain activities pertaining to virtual currencies fall within the scope of federal securities laws.

The SEC's Enforcement Division created a new Cyber Unit and Retail Strategy Task Force[5] focused on targeting potential cryptocurrency market violations and seeking to develop protections for retail consumers. The Cyber Unit is tasked with monitoring social media and the Internet for attempted market manipulation and hacking attempts, in addition to investigating and pursuing enforcement actions against entities that employ distributed ledger technology to violate securities laws. Increasingly, the SEC is scrutinizing so-called Initial Coin Offerings (ICOs)[6] whereby start-up business ventures bypass traditional vehicles for early-stage financing by creating their own virtual currency, which interested parties may acquire for real or other virtual currencies. Such activities can run afoul of existing securities laws, which require certain public solicitations of capital to register with the SEC or comply with one of the existing registration exemptions. Meanwhile, the CFTC announced that the

agency has classified virtual currencies as a commodity and subject to their regulation under the Commodity Exchange Act.[7]

### *Tax Avoidance and the IRS*

A major concern for governments is tax avoidance related to virtual currencies. The Internal Revenue Service (IRS) published guidance concerning its tax treatment of virtual currencies by classifying them as property that is subject to gains and losses treatment under existing laws.[8] This guidance served as the basis for a John Doe proceeding commenced in 2017 by the IRS seeking to unmask numerous users of the virtual currency service Coinbase, which the IRS suspected was being used to avoid reporting taxable income.[9] Following an adverse ruling, Coinbase announced that it would provide the IRS with the personal information of thousands of users.

Another federal tax issue owners of virtual currencies now face involves a key language change made to IRC § 1031, enacted as part of the "Tax Cuts and Jobs Act"[10] passed in December 2017, which addresses the tax treatment of like-kind property exchanges. Critically, the new law narrowed the applicability of this code section from "property" to exclusively "real property." Because a virtual currency, by definition, cannot be considered real property, this change appears to preclude taxpayers from using this provision as part of a tax management strategy.

### *Registration Requirements under the Bank Secrets Act*

Tasked with implementation and oversight of anti-money laundering activities and counterterrorism financing, the Treasury Department's Financial Crimes Enforcement Network (FinCEN)[11] has published guidance clarifying what kind of virtual currency activities, barring exemption, would subject an entity to registration and oversight pursuant to the agency's authority under the Bank Secrets Act.[12] Specifically, the agency indicated that although entities that used virtual currencies as payment method for goods and services purchased would not be subject to FinCEN's registration requirements, those who acted as administrators or exchanges would be subject to FinCEN's jurisdiction.

Following the issuance of this guidance, FinCEN published responses regarding two inquiries made to the agency regarding this subject.[13] In each instance, the requesting business sought clarification as to whether the platform each company was developing to facilitate the acquisition of virtual currencies or use them as a payment method for goods or services purchased would make them subject to FinCEN jurisdiction. Applying its prior guidance, in each instance the agency indicated that such activity would not qualify the business as a normal purchaser or seller but would instead make it a money transmitter subject to registration and oversight.

## Developing a Blockchain Research Strategy

Given the current and future legal implications of blockchain technology, many attorneys will want to develop research strategies to establish basic competency in this area and keep track of current laws and emerging legal issues surrounding it. The sections below list books for attorneys seeking foundational knowledge of blockchain technology, websites for those seeking the latest news and information about cryptocurrencies, and additional resources for attorneys looking to advise clients in this developing area.

### *Books*

Due to the rapid development of blockchain technology and its constant adoption for new purposes, books about the subject may possess a limited shelf-life. Following that word of caution, a whole range of books serve as a primer for blockchain and cryptocurrency technology:

- *Blockchain Revolution: How the Technology Behind Bitcoin is Changing Money, Business, and the World.*[14] Geared toward individuals who are new to blockchain technology, this book provides an overview of its practical application, discusses ways in which the technology currently is used in different sectors, and speculates as to how it may be used in the future.
- *Bitcoin and Cryptocurrency Technologies: A Comprehensive Introduction.*[15] This book is a technological and economic primer on cryptocurrencies, providing foundational knowledge concerning blockchain technology, how cryptocurrencies implement it, and the ideology behind its use.
- *The Internet of Money*, volumes 1[16] and 2.[17] A frequent presenter on the topic, Andreas Antonopoulos not only discusses the importance and potential transformative nature of the technology, but also explores the main social and cultural implications that it entails.
- *The Age of Cryptocurrency: How Bitcoin and Digital Money Are Challenging the Global Economic Order.*[18] The authors examine the role cryptocurrencies play in the global economy. They discuss the currencies' potential to decentralize certain aspects of the economy, their potentially destabilizing influence, and where the technology may be headed in the future.
- *Cryptoassets: The Innovative Investor's Guide to Bitcoin and Beyond.*[19] This resource discusses the wide array of cryptocurrencies currently available and ways to leverage the technology to make strategic investments in this market.
- *The Business Blockchain: Promise, Practice, and Application of the Next Internet Technology.*[20] Looking beyond cryptocurrency, this publication explores the many other applications for blockchain technology throughout the economy and its potential future applications to speed business development.

### *Websites*

Considering the popularity of cryptocurrencies and blockchain technology, it's no surprise that many websites focus on blockchains. The official websites for cryptocurrencies such as Bitcoin[21] and Ethereum[22] and exchanges like Coinbase[23] offer valuable information about the technology and property. (But keep in mind that because these websites exist to promote the technology, some bias may be present.) In addition, websites like CryptoCompare[24] and Coins.live[25] identify

the various cryptocurrencies available and provide market information about trading price. Attorneys can also find information about various technological, business, and legal issues surrounding blockchains through conventional news and business sources, technology-oriented websites such as Ars Technica[26] and The Verge,[27] and blockchain-specific sources like Coindesk[28] and Blockchain Tech News.[29]

### *Additional Resources for Legal Research*

An increasing number of law review articles and subscription platform resources are being published and developed to help attorneys advise clients in this practice area. Major platforms such as Westlaw, Lexis, Bloomberg Law, and Cheetah provide access to current awareness resources, tools, and other publications addressing this subject. Currently, West publishes a treatise entitled *The Blockchain: A Guide for Legal and Business Professionals*,[30] which serves as a detailed primer concerning relevant legal issues. Additionally, numerous law review and journal articles have been published concerning the specialized legal areas affected by the technology, including securities,[31] real estate,[32] smart contracts,[33] and intellectual property.[34]

Government websites are another valuable source of legal information concerning this technology. The SEC, CFTC, and IRS, for example, provide useful guidance on these topics. Also, many state government websites and Self-Regulatory Organizations such as the Financial Industry Regulatory Authority (FINRA)[35] provide detailed information about potential issues associated with blockchains. An easy way to locate relevant information about this technology across many government websites is to employ Google's advanced search functionality,[36] which permits users to restrict their searches to specific websites, such as the SEC's website, or specific domains such as all ".gov" websites. Researchers attempting to locate relevant content across many different governmental bodies can save significant time by performing an advanced search.

Finally, the fast-breaking legal developments regarding blockchains necessitates monitoring news for legal changes and developments in this field. Current awareness publications such as BNA Law Reports[37] and Law360[38] are good sources for breaking news.

### A Final Note: Maintaining Flexibility

As more industries embrace blockchain technology, the number of resources, statutes, regulations, cases, and administrative guidance involving this area will only increase. Legal practitioners will need to stay on top of what publications are available on the topic, changes to the law, and other relevant news associated with it. CL

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**NOTES**

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