HANDBOOK OF BLOCKCHAIN, DIGITAL FINANCE, AND INCLUSION

VOLUME 2

ChinaTech, Mobile Security, and Distributed Ledger

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Betting Blockchain Will Change Everything – SEC and CFTC Regulation of Blockchain Technology

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Contents

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"Silicon Valley and Wall Street are ***betting... the blockchain... can change... everything...***" (Goldman) Blockchain technologies have the potential to improve the trading of certain types of securities and derivatives and to address the limitations of the current post-trade process by modernizing, streamlining and simplifying the design of the financial industry infrastructure with a shared fabric of common information. (DTCC) There are several aspects of blockchain technologies that offer tremendous opportunities to improve existing processes, including the ability to validate securities transaction and the creation of an immutable record of transactions.

9.1 Introduction

While Blockchain technology has captured the imagination of the financial services industry, the technology will need to overcome a number of challenges before it can be widely adopted. (DTCC) The industry will need to determine whether using the technology is more cost effective than improving existing technology and whether it can overcome its inherent scale and

performance challenges. (Id.) The potential applications of blockchain technologies will also be subject to the rules adopted by regulators including the U.S. Securities and Exchange Commission ("SEC") and the U.S. Commodity Futures Trading Commission ("CFTC").

This chapter provides an introduction to the crisis of the 1960s that spurred the creation of the national market system which then spurred the growth of electronic trading, and the development of financial services technology. This chapter addresses the main features of a blockchain technologies and when blockchain technology platforms must register with the SEC as an exchange, an alternative trading system ("ATS"), a broker-dealer, a clearing agency, or as a transfer agent. Finally, this chapter examines a recent CFTC case that addressed whether a blockchain technology platform must register with the CFTC as a Futures Commission Merchant ("FCM").

To better understand the potential regulation of blockchain technology it is helpful to understand the causes of the development of the current national market system and model for regulation by the SEC.

9.2 The Paper Crisis and the National Market System

From 1934 through 1975, trading, clearance and settlement of securities in the United States was governed by the Securities Act of 1933 (the "Securities Act"), and the Securities Exchange Act of 1934 (the "Exchange Act"). The clearance and settlement of trades was governed by state laws. It was not until the late 1960s that the SEC began focusing on how securities transactions were cleared and settled. (Bergmann, L.)

9.2.1 The Paperwork Crisis

In the late 1960s and early 1970s, securities markets in the United States experienced a back-office crisis (the "Paperwork Crisis") caused by increasing volumes and back-office inefficiencies in processing securities transactions. (Id.) During the Paper Crisis, a brokerage firm used approximately 33 different documents to execute and record a single securities transaction. (Id.) These paper-based transactions slowed processing to the point where exchanges shortened the trading day to alleviate back-office delays. (Id.) Clerical personnel at firms were working day and night to process transactions. (Id.) As the mounds of paper grew, so did the number of errors in handling and recording transactions. (Id.)

The confusion and delays in the back offices of brokers and dealers were magnified by inadequate clearance and settlement facilities, particularly in the over-the-counter market. (Id.) Systems designed for the three million share days of 1960 proved incapable of dealing with

the astonishing volume of thirteen million share days around the end of the decade. (Id.) Operational deficiencies caused fail rates and customer complaints to soar. (Id.) Losses in 1967–1968 caused an unprecedented number of broker-dealer firm failures. (Id.) Approximately 160 New York Stock Exchange ("NYSE") member firms went out of business while others either merged or liquidated. Because the problems confronting the industry were industry-wide and could not be tackled in isolation, few immediate solutions were available. (Id.)

9.2.2 SEC Response

By the early 1970s, Congress examined the back-office crisis and asked the SEC to (1) compile a list of unsafe and unsound practices employed by brokers and dealers in conducting their business, (2) report to Congress on steps being taken to eliminate these practices, and (3) recommend additional legislation that might be needed to eliminate these unsafe and unsound practices. (Id.) In its study, the SEC found:

> ***There is no area of the securities business which offers more opportunity for reducing costs*** *as well as exposure to the kind of disruption which resulted in loss to customers during the 1969–1970 period than the improvement and modernization of the systems for clearing, settlement, delivery, and transfer of securities.* ***It was an archaic method of achieving this simple objective which nearly drowned the financial community in a tidal wave of uncontrolled paper***.

(NSCC Order)

After extensive studies and hearings, Congress agreed that a fundamental weakness in the U.S. clearance and settlement system was the absence of a mechanism to give direction to, and ensure cooperation and coordination among, the entities engaged in securities processing – clearing corporations, securities depositories, transfer agents, and issuers. (Bergmann, L.) Industry practice combined with a lack of uniformity had failed to effectively support transaction processing in the U.S., and legislation soon followed. (NSCC Order)

9.2.3 Securities Act Amendments of 1975

In 1975, Congress enacted amendments to the Exchange Act finding that: (i) **the prompt and accurate clearance and settlement of securities transactions is necessary for the protection of investors**; (ii) inefficiency imposes unnecessary costs on investors and intermediaries;

(iii) *new data processing and communication techniques present opportunities for more efficient, effective, and safe clearing procedures*; and (iv) linking of clearance and settlement facilities, and the development of uniform standards and procedures, would reduce unnecessary costs and increase investor and intermediary protection. (15 U.S.C. § 78q-1(a)(1)(A)-(D))

The Securities Acts Amendments of 1975 (the "Securities Acts Amendments"), made sweeping changes to the federal securities laws, established the national market system and the national clearance and settlement system as they exist today. (15 U.S.C. §78q-1(a)(2)) Congress directed the SEC to, among other things: (i) facilitate the establishment of a national system for the prompt and accurate clearance and settlement of transactions in securities and (ii) end the physical movement of securities certificates in connection with the settlement among brokers and dealers of transactions in securities.

Two basic themes recur throughout the legislative history of the securities processing provisions of the Securities Acts Amendments: (i) prevent another paperwork crisis in the securities industry and (ii) establish a safe, efficient, and modern national clearing and settlement system. Section 17A of the Exchange Act gave the SEC the authority to facilitate: (i) the establishment of a national system for prompt and accurate clearance and settlement in securities and (ii) linked or coordinated facilities for clearance and settlement of related financial products.

Congress instructed the SEC that in developing a national market system, "competition, rather than regulation, should be the guiding force." (Hause Report) *The SEC is mandated by Congress to facilitate the development of a national market system not to be its chief architect*. In establishing this mandate, Congress identified five criteria to guide the SECs role in the establishment of a national market system:

1. promotion of the development of mechanisms that allows for economically efficient execution of securities transactions;
2. promotion of fair competition;
3. promotion of transparency;
4. improvement of investor access to the best markets; and
5. the development of mechanisms that allow for investors' orders to be executed without the participation of a dealer.

(Section 11A(a) of the Exchange Act)

Congress did not grant the SEC unfettered authority over the national market system. The two "paramount objectives" of the national market system were "the maintenance of stable and orderly markets" and "the centralization of all buying and selling interest so that each investor will have the opportunity for the best possible execution of his order, regardless of where in the system it originates." (Senate Report (1975)) Congress did not instruct the SEC to dictate

the specific elements of a national market system. Rather, Congress chose to rely on an "approach designed to provide maximum flexibility to the [SEC] and the securities industry in giving specific content to the general concept of the national market system." (Id.)

Congress implemented this approach by adding Section 11A to the Exchange Act. Section 11A(a) directs the SEC to facilitate the establishment of a national market system in accordance with specific congressional findings and objectives. Among these findings were that new data processing and communications techniques created the opportunity for more efficient and effective market operations, and that the linking of all markets through such data processing and communications facilities would increase the information available to broker-dealers and investors. Congress stated in 1975 that the SEC would not have:

> ***either the responsibility or the power to operate as an "economic czar" for the development of a national market system***. *Quite the contrary, for a fundamental premise the bill is that the initiative for the development of the facilities of a national market system must come from private interests and will depend upon the vigor of competition within the securities industry...*

(Senate Report)

This is not to say that the SEC does not have an important role in the national market system. As Congress recognized in 1975:

> *Although the [SEC]'s basic role would be to remove burdens to competition which would unjustifiably hinder the market's natural economic evolution and to assure that there is a fair field of competition consistent with investor protection, in situations in which natural competitive forces cannot, for whatever reason, be relied upon, the SEC must assume a special oversight and regulatory role.*

(Id.)

While blockchain technology was not available in 1975, many technologists believe the technology could help the financial services industry accomplish many of the goals of the Securities Acts Amendments. The question for Congress and the industry will be how such technologies should be regulated by the SEC and the CFTC. To understand how blockchain technologies should be regulated, it is helpful to understand the technology.

9.3 Blockchain Technologies

Blockchain is a database structure that can only be updated by appending a new set (or block) of valid transactions to the log of previous transactions. (ECB Paper) As noted by Goldman Sachs in a note to clients:

> *In its most basic form, the **blockchain records ownership of bitcoin and transactions involving the crypto currency across a wide network of computers, as opposed to a centralized ledger**. Transactions are signed off by the parties involved using the software, checked by the network or the "crowd," then added to the blockchain – a long string of code that records all activity. Encryption in the software ensures these "blocks" cannot be tampered with or altered. And the decentralized nature means the "crowd" police the whole system. **The software cuts out the need for a "trusted middleman" to sit in between parties in a transaction, such as a bank or clearinghouse.** This makes transactions quicker, cheaper, and easier when compared to the current systems banks use.*

(Goldman) Many firms in the financial services industry believe blockchain technology can be adapted for use in traditional financial services transactions in a way that "***has the potential to redefine transactions and the back office of a multitude of different industries***. From banking and payments to ... trade settlement ... a distributed shared ledger has the potential to make interactions quicker, less-expensive and safer." (Goldman)

The focus of the financial services industry on blockchain technologies has attracted the attention of the SEC which recently hosted a FinTech Forum that included a panel discussion on blockchain technologies. (SEC FinTech Forum) The SEC has noted:

> *[T]he blockchain... is being tested in a variety of settings, to determine whether it has utility in the securities industry. What utility, if any, would a distributed public ledger system have for transfer agents, and how would it be used. What regulatory actions, if any, would facilitate that utility? **How would transfer agents ensure their use of or interaction with such a system would comply and be consistent with federal securities laws and regulations, including the transfer agent rule?***

(Transfer Agent Release)

9.3.1 What Is Blockchain Technology?

The idea of a blockchain was introduced in 2008 as a basis for the virtual currency Bitcoin, which is an example of an unrestricted blockchain.[1] (Nakamoto, S.) Blockchain technology is a distributed list of all transactions across a peer-to-peer network. Blockchain is the technology underlying Bitcoin and other digital currencies, and it has the potential to disrupt a wide variety of business processes. (PricewaterhouseCoopers) The blockchain is "authoritative" because every user agrees on it. (Id.) In some blockchain initiatives there are no central, regulated institutions playing any role in the process. (ECB Paper)

Advocates of blockchain technology believe it could substantially improve the trading, clearance and settlement of securities. (Id.) SEC Commissioner Stein believes "one could imagine a world in which securities lending, repo, and margin financing are all traceable though blockchain's transparent and open approach to tracking transactions." (Stein, K.)

9.3.2 Blockchain and Traditional Financial Services Technology

The technologies used by the financial services industry have developed over time as a network of mutually trusting institutions, with legal agreements and regulations designed to minimize risks, such as operational and counterparty risk, that are not directly related to the business of a securities issuer. (ECB Paper) Each institution trades with accountable and authorized counterparties, under the supervision and oversight of regulators. (Id.)

The adoption of blockchain technology will mean that competing financial institutions will be able to share a common digital representation of asset holdings and keep track of the execution, clearing and settlement of trades outside their legacy proprietary databases, and without the need for a central database management system. (Id.) Blockchain technology will enable users to become peers in a shared database, which they can rely on to record transfers of assets and to perform additional related activities involving multiple parties, such as trading, clearance, and settlement. (Id.)

Blockchain users can propose new transactions and, depending on the blockchain chosen, they can either contribute to validation collectively or have a subset of users responsible for this task. A transaction is validated when a specified proportion of the network's validators have reached a consensus as to its legitimacy. (Id.) Changes to the shared database are then reflected in its digitally signed versions, which users can store locally (either in their entirety or with only a subset of transactions/accounts visible). Users can then extract the updated information they need for conducting their respective businesses from these locally stored databases. (Id.)

Blockchains allow their users to store and access information relating to a given set of assets and their holders in a shared database of either transactions or account balances. (Id.) This information is distributed among users, who could then use it to settle their transfers of, or for example, securities and cash, without needing to rely on a trusted central validation system. (Id.)

In financial markets, the substantial de-materialization of securities and cash has progressively shifted the settlement of a trade from the physical delivery and paper-based recording, to a system of book transfers in digital databases. (Id.) What remains unchanged is the need for an authoritative "golden record" of holdings to be kept by specific financial market infrastructures, and for intermediaries involved in the settlement process to update their individual databases by communicating with the other institutions involved, at the different levels of post-trading, in order to be able to reflect the changes in each other's records. (Id.) The high cost of this type of reconciliation process has led many market players to consider distributed ledgers as an alternative to central validation systems – currently one per institution (internal records of outstanding positions) or per cluster of institutions (e.g. interoperable market infrastructure) – to keep their reciprocal records updated. (Id.)

Blockchains allow their users to reach consensus on a particular version of the distributed ledger, in particular on the sequential order of transactions. (Id.) This means that there cannot be any doubt as to the users' respective holdings. (Id.) Central validation is replaced in a blockchain by a set of cryptographic solutions and economic incentives that combine to prevent illicit updates and reconcile discrepancies. (Id.) The ledger produced can thus be considered authoritative, although its management is shared among users with conflicting incentives. (Id.)

9.3.3 Restricted and Unrestricted Blockchains

Blockchains can be divided into those which are restricted and those which are unrestricted. (Id.) Restricted blockchains are closed systems whose members are identified and accountable entities. (Id.) Updates to the blockchain can only be proposed and validated by authorized participants. (Id.) In unrestricted blockchains, by contrast, any entity can access the database and, depending on the specific validation method used, may be able to contribute to updating the ledger or to submit spam transactions to cause a denial of service. (Id.)

In a restricted blockchain the identity of participants is known, at least by its governance body. (Id.) This implies that any wrongdoer can be identified and his misbehavior can be punished in the case of future activity in the ledger. (Id.) Restricted blockchains also expose the conduct of any participants in the blockchain network to the set of rules and law-enforcement measures that typically apply to off-ledger activity. (Id.) By definition, users of unrestricted

blockchains cannot be held accountable outside the distributed ledger for their activity in the network. (Id.)

While blockchain technologies may be well suited to accomplishing the goals of the Securities Acts Amendments, the laws that regulate securities and commodities are not designed to regulate such innovative technologies.

9.4 SEC Regulation of Blockchain Technology

As noted by Commissioner Stein, "creative uses of blockchain are still in their infancy... [and] a lot of questions will need to be answered." (Stein, K.) Echoing Commissioner Stein's comments, SEC Chair White has noted: *"[b]lockchain technology has the potential to modernize,* **simplify, or even potentially replace** *current trading and clearing and settlement operations*." (White, M.J.) However, as White noted in the same speech:

> ***One key regulatory issue is whether blockchain applications require registration under existing [SEC] regulatory regimes, such as those for transfer agents or clearing agencies****. We are actively exploring these issues and their implications. [The SEC's] Advanced Notice of Proposed Rulemaking and Concept Release on transfer agent regulations... asked for public comment on the use of blockchain technology by transfer agents and how such systems fit within federal securities regulations.*

(Id.)

While there is tremendous potential for blockchain technology in the financial services industry, it is less clear how regulators in the United States will treat platforms that use blockchain technology in the financial or securities sectors. It is unclear if those platforms must register with the SEC as an exchange, an ATS, a broker-dealer, a clearing agency, or a transfer agent. Before regulators can address this issue, they must better understand in what instances blockchain technology involves transactions in securities.

9.4.1 What Is a Security?

The definitions of a "security" under the Securities Act and the Exchange Act are virtually identical and each is broad enough to include the various types of instruments that are used in commercial marketplaces that one might suspect to fall within the ordinary concepts of a security. (Securities Act and Exchange Act) This would include common instruments like

stocks, bonds, and notes, as well as the various collective investment pools and common enterprises devised by persons seeking to generate profits from the efforts and investments of others (i.e. investment contracts and instruments commonly known as securities).

The definition of a "security" under U.S. securities law does not include blockchain technology. However, the SEC has argued that investments in Bitcoin-related schemes that make use of blockchain technology are investment contracts – a contract, transaction, or scheme involving: (i) an investment of money, (ii) in a common enterprise, and (iii) with the expectation that profits will be derived from the efforts of the promoter or a third party. (BTC Trading Corp and Howey).

Assuming in certain instances blockchain technology platforms are deemed to be facilitating the trading or clearance and settlement of securities, the next issue is whether such platforms must register as an exchange, an ATS, a broker-dealer, a clearing agency, or a transfer agent.

9.4.2 Securities Exchanges

Section 3(a)(1) of the Exchange Act defines an "exchange" as "any organization, association, or group of persons, whether incorporated or unincorporated, which constitutes, maintains, or provides a market place or facilities for bringing together purchasers and sellers of securities or for otherwise performing with respect to securities the functions commonly performed by a stock exchange as that term is generally understood, and includes the market place and the market facilities maintained by such exchange." Exchange Act Rule 3b-16(a) interprets the definition to mean any organization, association, or group of persons that: (1) *brings together the orders of multiple buyers and sellers* and (2) uses established, nondiscretionary methods (*whether by providing a trading facility* or by setting rules) *under which such orders interact with each other, and the buyers and sellers entering such orders agree to the terms of a trade*.

Rule 3b-16(b) of the Exchange Act expressly excludes the following systems from the meaning of "exchange": (1) systems that merely route orders to other facilities for execution; (2) systems operated by a single registered market maker to display its own bids and offers and the limit orders of its customers, and to execute trades against such orders; and (3) systems that allow persons to enter orders for execution against the bids and offers of a single dealer. Absent an exemption, an exchange must register as a national securities exchange pursuant to section 6 and section 19(a) of the Exchange Act. (Colby, R.)

If a blockchain technology platform brings together multiple buyers and sellers of digital assets that are deemed securities, the platform could be required to register as a securities exchange unless it falls within an exclusion from registration.

9.4.3 ATS

In 1998, the SEC adopted Regulation ATS, which allows an ATS to choose whether to register as a national securities exchange or to register as a broker-dealer and comply with additional requirements of Regulation ATS. (Regulation ATS) An "alternative trading system" means any organization, association, person, group of persons, or system: (1) that constitutes, maintains, or provides a market place or facilities for bringing together purchasers and sellers of securities or for otherwise performing with respect to securities the functions commonly performed by a stock exchange within the meaning of Rule 3b-16 under the Exchange Act, and (2) that does not set rules governing the conduct of subscribers other than the conduct of such subscribers' trading on such organization, association, person, group of persons, or system; or discipline subscribers other than by exclusion from trading. (Regulation ATS, Rule 300(a))

Any system exercising self-regulatory powers, such as regulating its members' or subscribers' conduct when engaged in activities outside of that trading system, must register as an exchange or be operated by a national securities association. (Colby, R.) The SEC can effectively require a dominant ATS to register as a national securities exchange if it finds it is necessary or appropriate in the public interest or consistent with the protection of investors. (Rule 3a1-1(b))

A blockchain technology platform may be required by the SEC to register as an ATS if it maintains a market place or facilities for bringing together purchasers and sellers of digital assets that are deemed securities, and it does not set rules governing the conduct of subscribers other than the conduct of such subscribers' trading on such platform. If the platform is not required to register as an ATS, the operator of the platform may be required to register as a broker-dealer.

9.4.4 Broker-Dealers

Section 15 of the Exchange Act requires registration with the SEC of all broker-dealers using interstate commerce or the facilities of any national securities exchange to effect transactions in securities (other than exempted securities and certain short-term debt instruments). Section 3(a)(4)(A) of the Exchange Act defines a "broker" as "any person engaged in the business of effecting transactions in securities for the account of others." The Exchange Act and the rules thereunder do not define these terms. The courts and the SEC have taken an expansive view of the scope of these terms. (Colby, R.) The SEC and the courts apply a "facts and circumstances" analysis in evaluating whether a person has acted as a broker, with no single element being dispositive. (Id.)

Depending on the circumstances, the operator of a blockchain technology platform may be deemed a broker-dealer if the operator of the platform is deemed to be engaged in the business of effecting transactions in securities for the account of others.

9.4.4.1 Engaged in the Business

Courts have read "engaged in the business" as connoting a certain regularity of participation in purchasing and selling activities rather than a few isolated transactions. (Id.) Two factors are important in determining whether there is "regularity of business": the number of transactions and clients, and the dollar amount of securities sold, as well as the extent to which advertisement and investor solicitation were used. (Id.)

Besides "regularity of business," courts and the SEC have identified several other factors which indicate that a person is "engaged in the business." (Id.) These factors include: (i) receiving transaction-related compensation; (ii) holding oneself out as a broker, as executing trades, or as assisting others in settling securities transactions; and (iii) soliciting securities transactions.

The operator of a blockchain technology platform could be deemed to be engaged in the business of effecting transactions in securities because it will more than likely receive transaction-related compensation, execute trades for users of the platform, and solicit users to engage in such transactions.

9.4.4.2 "For the Account of Others"

In order to be considered a "broker," a person must be effecting transactions in securities for others, not itself. (Colby, R.) A firm effecting transactions solely on its own behalf is generally not considered to be acting as a "broker." (Id.)

Unless the operator the blockchain technology platform is executing all transactions as a principal to the transaction, the platform operator could be deemed to be effecting transactions in securities for others.

9.4.4.3 Role of Compensation in Analysis

In SEC guidance and enforcement actions, the agency has stated that receiving commissions or other transaction-related compensation is one of the determinative factors in deciding whether a person is a "broker" subject to the registration requirements under the Exchange Act. (SEC Study of Investment Advisers and Broker-Dealers) Transaction-related compensation refers to compensation based, directly or indirectly, on the size, value or completion of

any securities transactions. The SEC will look behind the terms of a compensation arrangement to determine its economic substance, that is, to determine whether it is transaction-related. (Definition of Terms) The receipt of transaction-based compensation often indicates that a person is engaged in the business of effecting transactions in securities. (Colby, R.)

If the operator of a blockchain technology platform receives transaction-related compensation, in the sale of a digital asset that is deemed a security, the platform could be deemed to be acting as a broker-dealer.

9.4.4.4 Effecting Transactions in Securities

Courts and the SEC have determined that a person "effects transactions in securities" if the person participates in such transactions "at key points in the chain of distribution." (Mass. Fin. Servs., Inc. v. Sec. Investor Prot. Corp.) According to the SEC, such participation may include, among other activities: (i) assisting an issuer to structure prospective securities transactions; (ii) helping an issuer to identify potential purchasers of securities; (iii) screening potential participants in a transaction for creditworthiness; **(iv)** *soliciting securities transactions (including advertising)*; (v) negotiating between the issuer and the investor; (vi) making valuations as to the merits of an investment or giving advice; (vii) *taking, routing or matching orders, or facilitating the execution of a securities transaction*; (viii) handling customer funds or securities; and (ix) preparing and sending transaction confirmations (other than on behalf of a broker-dealer that executes the trades). Handling customer funds may also include handling customer's digital currencies, such as Bitcoin, in connection with Bitcoin-denominated securities transactions. (BTC Trading Corp.)

A platform that facilitates transactions in digital assets could be deemed effecting securities transactions if it is helping an issuer to identify potential purchasers of securities. The platform could also be deemed to be effecting securities transactions because it is soliciting securities transactions and facilitating negotiations between the issuer and the investor. The operator of a digital currency trading platform could be deemed to be effecting transactions in securities because it is taking, routing or matching orders, or facilitating the execution of a securities transaction. Finally, the operator of a digital asset trading platform could be deemed to be effecting transactions because it is handling customer funds (even if the funds are a digital currency) or securities.

9.5 BTC Trading Corp

In *Securities Exchange Commission v. BTC Corp.*, the SEC sanctioned a computer programmer for operating two online platforms that traded securities purchased with the virtual

currencies Bitcoin or Litecoin without registering the venues as broker-dealers or stock exchanges. (BTC Trading Corp.) The programmer, Ethan Burnside, also was sanctioned for conducting unregistered offerings. (Id.)

Burnside and his company BTC Trading Corp. operated two online enterprises – BTC Virtual Stock Exchange and LTC-Global Virtual Stock Exchange. (Id.) These exchanges provided account holders the ability to use Bitcoin or Litecoin to buy, sell and trade securities of businesses (primarily virtual currency-related entities) listed on the exchanges' websites. (Id.) The platforms were not registered as broker-dealers despite soliciting the public to open accounts and trade securities. (Id.) The platforms were not registered as stock exchanges despite enlisting issuers to offer securities for the public to buy and sell. (Id.) Burnside conducted separate transactions in which he offered investors the opportunity to use virtual currencies to buy or sell shares in the LTC-Global exchange itself and a separate Litecoin mining venture he owned and operated. (Id.) These offerings were not registered with the SEC as required under the federal securities laws. (Id.)

Burnside operated two online enterprises that were not properly registered to engage in the securities business they were conducting. (Id.) (Calamari, A.) BTC Trading Corp. and Burnside actively solicited the public to open accounts by advertising the websites for both of his stock exchanges on the Bitcoin Forum and other websites dedicated to virtual currency. (BTC Trading Corp.) The solicitation efforts resulted in approximately 2,655 users opening online accounts with LTC-Global exchange and executing approximately 60,496 trades through the website, paying a total of 12,081 litecoins in transaction-based compensation. (Id.) Approximately 7,959 users opened online accounts with the BTC exchange and executed approximately 366,490 trades through the website, paying a total of 2,141 bitcoins in transaction-based compensation. (Id.) The SEC found that in this line of business, Burnside and BTC Trading Corp. were required to register their online enterprises with the SEC as brokers or dealers. (Id.)

The SEC also found that Burnside and BTC Trading Corp. failed to register the LTC-Global exchange or the BTC exchange as exchanges despite providing issuers a platform to create and list initial and secondary offerings of securities in exchange for a listing fee. (Id.) A total of 52 issuers paid BTC Trading Corp. 11,450 litecoins in listing fees to list their shares with the LTC-Global exchange, and 69 issuers paid 210 bitcoins in listing fees to list their shares with the BTC exchange. (Id.)

The SEC concluded that Burnside and BTC Trading Corp. willfully violated Sections 5 and 15(a) of the Exchange Act. (Id.) Without admitting or denying the SEC's findings, Burnside and BTC Trading Corp. consented to cease and desist from committing or causing any future violations of the registration provisions. (Id.) Burnside agreed to be barred from the securities

industry with the right to reapply after two years, and to pay $58,387.07 in disgorgement and prejudgment interest plus a penalty of $10,000. (Id.)

Any firm that is planning to operate a platform that uses blockchain technology to facilitate trading should proceed with caution. While the SEC has not taken not the position that digital currencies are securities, the SEC has taken the position that transactions that use digital currencies can constitute the consideration for a purchase or sale of securities and the trading of such securities may require registration with the SEC as a broker, a dealer, an ATS, an exchange.

While the BTC Trading Corp. case is instructive on the issue of whether certain blockchain technology platforms must register as a broker, a dealer, or an exchange, the SEC has not addressed in what instances a blockchain technology platform must register as a clearing agency.

9.5.1 Clearing Agencies

Congress directed the SEC in 1975 to facilitate the establishment of a national system for the prompt and accurate clearance and settlement of securities transactions when it added Section 17A to the Exchange Act as part of the Securities Acts Amendments. (Clearing Agency Standards) At the time of the adoption of the Securities Acts Amendments, the Senate Committee on Banking, Housing and Urban Affairs stated the "banking and security industries must move quickly toward the establishment of a fully integrated national system for the prompt and accurate processing and settlement of securities transactions". (Senate Report)

A key component of the SEC's supervision of the securities clearance and settlement system is its authority to regulate clearing agencies. Before performing clearing agency functions, including trade comparison, netting, matching, and settlement activities, intermediaries must either register with the SEC or apply for an exemption from registration. The SEC's ability to achieve these goals and its supervision of securities clearance and settlement systems is based on the regulation of registered clearing agencies. (Clearing Agency Standards)

Clearing agencies are self-regulatory organizations that are required to register with the SEC. There are two types of clearing agencies: clearing corporations and depositories.

9.5.1.1 Clearing Corporations

Clearing corporations compare member transactions (or report to members the results of exchange comparison operations), clear those trades and prepare instructions for automated settlement of those trades, and often act as intermediaries in making those settlements. (Clearing Agencies) Clearing corporations provide several essential services to the market, including

comparing and confirming trade data submitted by participants (or reporting to participants the results of trade comparisons submitted by the exchanges), acting as the common counterparty and guaranteeing the completion of the trade if either side defaults or goes out of business, and preparing instructions for their participants regarding their settlement obligations. Clearing corporations generally instruct depositories to make securities deliveries that result from settlement of securities transactions.

A blockchain technology platform could be required to register as a clearing corporation if it compares the trades of users of the platform, clears the trades, and prepares instructions for automated settlement of the trades. The platform could also be required to register as a clearing corporation if the platform acts as the common counterparty and guarantees the completion of trades.

9.5.1.2 Depositories

In 1975 Congress considered the idea of separately regulating securities depositories, but instead defined clearing agencies in §3(a)(23)(A) to include depositories. There are statutory exceptions in §3(a)(23)(B), including: (1) any national securities exchange or solely by reason of its providing facilities for comparison of data respecting the terms of settlement of securities transactions effected on such exchange or by means of any electronic system; and (2) any bank, broker, dealer, if such bank, broker, dealer would be deemed to be a clearing agency solely by reason of functions performed by such institution as part of customary brokerage.

Depositories provide multiple services to the market by retaining custody of equity and debt securities issues and maintaining ownership records. The organization also effects deliveries of securities between participants via a book entry system that transfers ownership of securities electronically, thus eliminating the need for the physical movement of securities. Depositories receive instructions from the clearing corporation to deliver and receive securities on behalf of its participants, or from participants themselves, to move securities from one participant's account to another. The institutions also communicate with settling banks to net settle any financial obligations. Depositories hold securities certificates in bulk form for their participants and maintain ownership records of the securities on their own books.

A blockchain technology platform that retains *custody* of digital assets that are deemed securities could be deemed to be acting as a depository. In the BTC Trading Corp. case the SEC concluded the defendants had *custody* and control of customer funds by virtue of controlling the digital wallet in which the assets were stored. (BTC Trading Corp.) Similarly, a blockchain technology platform could be deemed to be acting as a depository if it effects deliveries of securities between participants via the blockchain (a book entry system that transfers ownership of electronically), without the need for the physical movement of securities.

Even if a blockchain technology platform is not deemed to be acting as a depository, it could be deemed to be acting as a transfer agent.

9.5.2 Transfer Agents

A "transfer agent" is defined in section 3(a)(25) of the Exchange Act as "any person who engages on behalf of an issuer of securities or on behalf of itself as an issuer of securities in: (i) countersigning such securities upon issuance, (ii) monitoring the issuance of such securities with a view to preventing unauthorized issuance, a function commonly performed by a person called a registrar, *(iii) registering the transfer of such securities, (iv) exchanging or converting such securities, or (v) transferring record ownership of securities by bookkeeping entry without physical issuance of securities certificates*". Transfer agents are required to register with the SEC.

Transfer agents record changes of ownership, maintain the issuer's security holder records, cancel and issue certificates, and distribute dividends. Because transfer agents stand between issuing companies and security holders, efficient transfer agent operations are critical to the successful completion of secondary trades. Section 17A(c) of the Exchange Act requires that transfer agents be registered with the SEC, or if the transfer agent is a bank, with a bank regulatory agency. (SEC – Transfer Agents) No registered self-regulatory organization governs transfer agents. (Id.) The SEC has promulgated rules and regulations for all registered transfer agents, intended to facilitate the prompt and accurate clearance and settlement of securities transactions and that assure the safeguarding of securities and funds. (Id.) The rules include minimum performance standards regarding the issuance of new certificates and related record-keeping and reporting rules, and the prompt and accurate creation of security holder records and the safeguarding of securities and funds. The SEC also conducts inspections of transfer agents. (Id.)

A blockchain technology platform could be required to register as a transfer agent if it monitors the issuance of securities or registers the transfers of securities. While it is unlikely a blockchain technology platform would countersign securities, platforms like the Distributed Autonomous Organization ("DAO") could be deemed to be monitoring the issuance of securities with a view of preventing unauthorized issuance (i.e., a registrar, registering the transferring of such securities). Other blockchain platforms could be deemed to be registering the transfer of securities, exchanging or converting securities, or transferring record ownership of securities by a bookkeeping or ledger entry without physical issuance of securities certifications.

Any firm that is planning to trade in or develop a platform that uses blockchain technology to clear or settle transactions in securities should proceed with caution. While the SEC has not

taken not the position that digital currencies are securities, the SEC has taken the position that transactions that use digital currencies may involve securities and the trading, clearance, or settlement of such securities transactions may require registration with the SEC as a broker, a dealer, an ATS, an exchange, a clearing agency, or a transfer agent.

While the SEC has addressed the issue of whether a blockchain technology platform must register as a broker, a dealer, or an exchange, and has solicited public comment on whether a blockchain technology platform must register as a transfer agent, the CFTC has not addressed in what instances a blockchain technology platform must register with the CFTC.

9.6 CFTC Regulation of Blockchain Technology

On June 2, 2016, the CFTC entered into a settlement agreement with Bitfinex for offering illegal off-exchange financed retail commodity transactions in Bitcoin and other digital currencies, and for failing to register as a Futures Commission Merchant ("FCM") as required by the Commodity Exchange Act ("CEA"). The Order requires Bitfinex to pay a $75,000 civil monetary penalty and to cease and desist from future such violations of the Act.

9.6.1 Introduction

The Bitfinex case is of interest to blockchain technology platforms because it marks the most recent action in which the CFTC has confirmed its belief that digital currency is a commodity and can therefore be regulated under the CEA. Unlike previous CFTC actions against Derivabit and TeraExchange, the CFTC spent relatively little time on the issue of whether digital currencies are commodities. The CFTC appears to have taken the position that all digital currencies are commodities. The CFTC bases its commodity argument on the belief that the definition of "commodity" in §1a(9) of the CEA is broad, and includes, among other things, "all services, rights, and interests in which contracts for future delivery are presently or in the future dealt in."

The Bitfinex case is of interest to blockchain technology platforms because it is the first time the CFTC has expressed an opinion with respect to the applicability of the exception for contracts of sale of a commodity that result in actual delivery within 28 days to transactions involving blockchain technology and digital wallets.

9.6.2 Facts

Bitfinex operated an online platform for exchanging and trading digital currencies, mainly Bitcoins. Bitfinex's "Exchange Trading" feature permitted users to exchange dollars for Bitcoins and to trade other digital currencies. Users accessed Bitfinex's platform and placed

orders through its website. Bitfinex also offered users a "Margin Trading" feature. Through this feature, Bitfinex permitted traders to borrow dollars and Bitcoins from other users on the platform in order to open leveraged positions on Bitfinex's exchange. Bitfinex referred to the participants on the platform who act as lenders as "Margin Funding Providers."

In order to initiate a loan, Margin Funding Providers entered offers in Bitfinex's online tool to lend funds with their own chosen terms, or they could lend at the "Flash Return Rate" set by the market. When an offer to borrow was accepted by a trader ("Financing Recipient"), the Financing Recipient could use the borrowed funds to buy or sell Bitcoins on Bitfinex's exchange. In addition to repaying the borrowed funds, Financing Recipient were responsible for paying fees and interest to the Margin Funding Providers. Bitfinex was not a principal, counterparty, or market-maker in any Bitcoin trade. Bitfinex administered and enforced the contracts established between Margin Funding Providers and Financing Recipients.

From April 2013 to August 2015, when a customer purchased Bitcoins on Bitfinex, the purchased Bitcoins were held for the benefit of the buyer in Bitfinex's omnibus settlement wallet. The individual customer interests in the omnibus settlement wallet were accounted for in real time on Bitfinex's database. However, the omnibus settlement wallet was owned and controlled by Bitfinex and Bitfinex held all "private keys" associated with its omnibus settlement wallet. Financing Recipients had no rights to access or use the bitcoins that they had purchased until Bitfinex released them, following satisfaction of the Financing Recipient's outstanding loan. Bitfinex considered Bitcoins held in the omnibus wallet to belong to the Financing Recipients, but subject to a lien in the amount of any outstanding loan plus fees owed to the Margin Funding Provider.

In August 2015, Bitfinex changed its model so that Bitcoins purchased using the Exchange Trading feature were held in multi-signature wallets established by a third-party firm that were individually enumerated for each trader. Bitcoins purchased using the Exchange Trading feature were settled to the Blockchain on an intra-day basis. However, Bitfinex retained control over the private keys to these wallets as well.

In January 2016, Bitfinex changed its model again so that Bitcoins purchased using both the Exchange Trading and Margin Trading features were held in individually enumerated, multi-signature wallets. However, Bitfinex continued to retain control over the private keys to those wallets.

Bitfinex's Margin Trading services were available to retail customers, and are not limited to eligible contract participants ("ECPs") or eligible commercial entities ("ECEs"). However, corporate users comprised a significant portion of Bitfinex's trading volume during the Relevant Period. In 2015, 88% of the dollars deposited to and withdrawn from Bitfinex were by corporate users.

Bitfinex's platform permitted users, including individuals and entities that did not meet the definition of an eligible contract participant or eligible commercial entity, to borrow funds from other users on the platform in order to trade Bitcoins on a leveraged, margined, or financed basis. Bitfinex was not registered with the CFTC.

According to the CFTC, Bitfinex "did not actually deliver" Bitcoins "purchased on a leveraged, margined, or financed basis to the traders who purchased them" Bitfinex held the purchased Bitcoins in electronic wallets that it owned and controlled. Bitfinex offered a "Margin Trading" feature permitted traders to borrow dollars and bitcoins from other users on the platform to purchase other currencies on the exchange.

As part of the Title VII of the Dodd–Frank Wall Street Reform and Consumer Protection Act of 2010 ("Dodd–Frank Act"), the CFTC was given more extensive jurisdiction which broadly applies to transactions with non-eligible contract participants or non-eligible commercial entity and financing on a leveraged or margined basis. Further, those transactions are subject to §4(a), §4(b), and §4b of the CEA which subjects the transaction to be treated "as if the agreement, contract, or transaction was a contract of sale of a commodity for future delivery." These provisions require those entities that are dealing with a future delivery to be registered with the CFTC.

9.6.3 CFTC Jurisdiction

Title VII of the Dodd–Frank Act amended the CEA and gave the CFTC new authority over certain leveraged, margined, or financed retail commodity transactions. Section 742(a) of the Dodd–Frank Act added Section 2(c)(2)(D) to the Act. That jurisdictional provision broadly applies to any agreement, contract, or transaction in any commodity that is entered into with, or offered to (even if not entered into with), a non-eligible contract participant ("non-ECP") or non-eligible commercial entity ("non-ECE") on a leveraged or margined basis, or financed by the offeror, the counterparty, or a person acting in concert with the offeror or counterparty on a similar basis. Section 2(c)(2)(D) further provides that such an agreement, contract, or transaction shall be subject to Sections 4(a), 4(b), and 4b of the CEA "as if the agreement, contract, or transaction was a contract of sale of a commodity for future delivery."

9.6.4 The Actual Delivery Exception

Section 2(c)(2)(D)(ii) of the CEA excepts certain transactions from CFTC jurisdiction. Section 2(c)(2)(D)(ii)(III)(aa) excepts a contract of sale that results in "actual delivery" within 28 days...." The CFTC has stated the determination of whether "actual delivery" has occurred within the meaning of Section 2(c)(2)(D)(ii)(III)(aa) of the CEA:

*requires consideration of evidence beyond the four corners of the contract docu-
ments. In determining whether actual delivery has occurred, the [CFTC] employs
a functional approach to assess whether there has been a "real and immediate"
transfer of "possession and control" to the "buyer or the buyer's agent" of the
commodity.*

The CFTC examines how the agreement, contract, or transaction is marketed, managed, and performed. Ownership, possession, title, and physical location, as well as the relationships between the buyer, seller, and possessor of the commodity, and the manner in which the sale is recorded and completed are all relevant considerations in determining whether there has been actual delivery. Thus, physical delivery of the entire quantity of the commodity, including the portion purchased using leverage, margin or financing, into the possession of the buyer, or a depository other than the seller, the seller's parent company, partners, agents and affiliates will satisfy the actual delivery exception, provided that the purported delivery is not a sham. By contrast, actual delivery will not have occurred if only a "book entry" is made by the seller purporting to show that delivery of the commodity has been made.

9.6.5 Section 4(a) of the CEA

Retail commodity transactions within the scope of Section 2(c)(2)(D) of the CEA are subject to enforcement under Section 4(a) of the Act, among other provisions, as if such transactions are commodity futures contracts. Section 4(a) of the CEA makes it unlawful for any person to offer to enter into, execute, confirm the execution of, or conduct an office or business in the United States for the purpose of soliciting, or accepting any order for, or otherwise dealing in any transaction in, or in connection with, a commodity futures contract, unless such transaction is made on or subject to the rules of a board of trade that has been designated or registered by the CFTC as a contract market or derivatives transaction execution facility for the specific commodity.

9.6.6 Section 4(d) of the CEA

Section 4d(a) of the CEA requires all persons acting as futures commission merchants ("FCMs") to register with the Commission. Section 1a(28) of the Act defines an FCM as an individual, partnership, corporation or trust, that is engaged in soliciting or accepting orders for retail commodity transactions, or that accepts money in connection with such transactions.

9.6.7 Analysis

The CFTC concluded that Bitfinex's platform did not fall within the scope of the actual delivery exception to the Act. While discussing the past guidance from the CFTC on the actual delivery exemption, the Bitfinex Order relies on an option from the Eleventh Circuit Court of Appeals which does not make reference to this guidance. In that case the court stated the term: "actual delivery" is unambiguous, and is therefore given its ordinary meaning. "Delivery" is "[t]he formal act of transferring something; it denotes a transfer of possession and control." The Bitfinex order the CFTC stated:

> [a]ctual delivery" denotes "[t]he act of giving real and immediate possession to the buyer or the buyer's agent." Id. "Actual delivery" is distinct from "constructive delivery."... (holding that "the electronic transfer of documents indicating control or possession" without physical transfer of the commodity "is by any definition constructive, rather than actual."); "Actual" is that which "exist[s] in fact" and is "real," rather than constructive.

(Bitfinex Order)

The CFTC concluded Bitfinex's transactions did not result in actual delivery to the Financing Recipients who traded on Bitfinex's platform. Bitfinex did not transfer possession and control of any bitcoin to the Financing Recipients, unless and until all liens on the bitcoin were satisfied. Prior to satisfaction of the liens, the Financing Recipients' Bitcoins were held in an omnibus settlement wallet owned and controlled by Bitfinex, and to which Bitfinex held the private keys needed to access the wallet.

The CFTC found Bitfinex's accounting for individual customer interests in the Bitcoin held in the omnibus settlement wallet in its own database was insufficient to constitute "actual delivery" noting that "book entry" purporting to show delivery is insufficient to fall within the scope of the exemption. The CFTC also noted the exemption did not apply because Bitfinex's change to its model in August 2015 and January 2016, where it retained control over the private keys to those wallets, and because the Financing Recipients had no contractual relationship with the third-party firm that established the wallets.

The Bitfinex order is of interest because the CFTC did not rely on its own guidance on the "functional approach" for evaluating the applicability of the actual delivery exemption set forth in the CFTC's past guidance. Instead the CFTC staff relied on a plain language application of the term that did not look "beyond the four corners of [the] contract[s]" traded on the Bitfinex platform to determine whether the actual delivery had occurred within 28 days. Similarly, the CFTC did not "examine how the ... contract, or transaction" on the Bitfinex platform

was "marketed, managed, and performed..." The CFTC also found the fact that Bitfinex had the authority to force liquidate customers' positions without the customers' prior consent if their equity fell beneath a preset level, which further evidenced Bitfinex's possession and control over the bitcoins. Finally, the CFTC concluded that the delivery of digital currencies from the digital wallet of a user of the Bitfinex platform, to another use of the Bitfinex platform, was because it was similar to a "book entry" by a seller that purported to show that delivery of the digital currency had been made.

Throughout the course of a year, Bitfinex used several different means of delivery. First, delivery was made to a wallet owned and controlled by Bitfinex (a single-signature wallet). Then, the model was voluntarily changed to a multi-signature wallet established by a third-party firm whereby Bitfinex still had control over the private keys, but was no longer a single-sig wallet. Finally, in January 2016 Bitfinex began using individually enumerated multi-signature wallets where the Bitfinex continued to retain control over the private key. None of these solutions were enough for the CFTC to find there to be "actual delivery" and therefore these models of delivery did not allow Bitfinex to qualify for the exemption from jurisdiction.

Following this analysis to its conclusion, all transfers of digital currencies between digital wallets could be deemed to fall outside the scope of the actual delivery exemption. The CFTC draws a distinction between *"actual"* versus *"constructive"* delivery. The CFTC views actual delivery as "the act of giving real and immediate possession to the buyer or the buyer's agent." Whereas, constructive delivery is defined as "an act that amounts to a transfer of title by operation of law when actual transfer is impractical or impossible." The CFTC argues that actual delivery must be met before the exception applies and actual delivery does not occur in any of Bitfinex's three delivery models.

If delivery to a digital wallet is not "actual delivery," then when could actual delivery ever take place? Further, if actual delivery is not met within the digital commodity space, how is it ever achieved with other commodities regulated by the CFTC? These are the hard questions not yet addressed by the CFTC. While this is the first time it has taken the question of delivery head on, it will likely not be the last as the CFTC strives to have a stronger grasp on regulating digital currency and as more platforms ask for answers to these hard questions.

Any firm that is planning to trade in or develop a platform to facilitate the trading of virtual currencies should proceed with caution, particularly if the platform proposes to offer users of the platform the ability to engage in margin or leverage trading. While the CFTC has taken the position that digital currencies are commodities, and that transfers between digital wallets do not fall within the scope of the actual deliver exception to the Act, these positions have not been confirmed by an act of Congress, the courts, or CFTC rules that have been subject to public comment under the Administrative Procedure Act.

Any firm that is looking to operate a platform to facilitate the trading of digital currencies should make sure the platform is properly structured to comply with the CEA. Due to the lack of clearly defined guidance with respect to the authority of the CFTC, and other regulators to supervise digital currencies, it is important that you engage experienced counsel to assist you in navigating the regulatory requirements that may apply to any business you are building.

9.7 Conclusions

Silicon Valley and Wall Street are betting blockchain technology can change everything. Blockchain technology has the potential to improve the trading of certain types of securities and derivatives and to address the limitations of the current post-trade process. These optimistic appraisals have been echoed by former Chair White and Commissioner Stein of the SEC.

While the technology is not fully mature, blockchains represent an attractive option for financial institutions to improve the efficiency of trading and post-trading functions. However, there are a number of technological and regulatory barriers to widespread adoption of the technology. Before blockchain technology can be deployed across various sectors of the financial services industry, it is imperative that regulators in the United States, Europe, and Asia provide meaningful guidance to the industry on whether the use of blockchain technology requires users of the technology to register as brokers, dealers, ATSs, exchanges, clearing houses, or transfer agents.

While there is significant potential for the use of blockchain technology in the financial services industry, there is considerable work that must be done to more clearly define the regulations that apply to such technology. The regulation of securities exchanges in the United States and Europe has not undergone meaningful changes since the early part of the last decade. Regulation of clearing houses in the United States has not been considered in a meaningful way since the early 1980s. Unfortunately, the review of the laws, rules, and regulations in both areas did not consider the use of blockchain technology.

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Note

1. Bitcoins were purportedly developed in 2008 by an anonymous computer programmer known as "Satoshi Nakamoto."

HANDBOOK OF BLOCKCHAIN, DIGITAL FINANCE, AND INCLUSION VOLUME 2
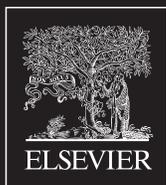
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