ALTERNATE USES FOR BLOCKCHAINS IN BUSINESS: IT'S NOT ALWAYS ABOUT THE MONEY

RONALD L. CHICHESTER, *Tomball*
Ronald Chichester, PC

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Ronald Chichester
Ron@TexasComputerLaw.com
texascomputerlaw.com
(713) 302-1679

Address
Ronald Chichester, P.C.
31526 Helen Lane
Tomball, Texas 77375

Ronald Chichester

Attorney at Law

Profile Experienced in all areas of law involving computers and networks. Particular specialization in artificial intelligence, machine learning, blockchains, computer security, computer crimes, incidence response, electronic discovery, computer forensics, intellectual property (patents, copyrights, trademarks and trade secrets), electronic discovery, trade secret misappropriation by employees, analysis and comparison of source code (for copyright infringement and trade secret misappropriation), electronic commerce, identity theft, technology licensing (especially software), data privacy, corporate espionage. Expert witness for crytocurrency cases, trade secret misappropriation, software copyright infringement and family law cases.

Education

1991, University of Houston Law Center
Juris Doctorate

1984, University of Michigan
MS in Aerospace Engineering

1982, University of Michigan
BS in Aerospace Engineering

Admissions and Qualifications

- State Bar of Texas
- United States Court of Appeals for the Federal Circuit
- United States Patent and Trademark Office
- Certified Computer Forensic Examiner
- Certified Information Systems Auditor

Professional Activities

- Chair of the Blockchain Committee for the Business Law Section
- Past Chair of the Business Law Section
- Past Chair of the Computer and Technology Section
- Member of the Intellectual Property Section

Special Skills Computer forensic examiner and expert witness for electronic discovery and copyright infringement cases involving computer source code. Thirty-six years of software programming experience. Able to read and to write computer software applications (for desktops and servers) in a variety of languages. Adept at making database-oriented software programs for Internet applications. Writes his own software applications for specialized electronic discovery, artificial intelligence, data science, and computer forensic matters.

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I. INTRODUCTION

By now, just about everyone has heard of cryptocurrencies, known in legal parlance as "virtual currencies." Bitcoin[1] is probably the most famous example of a cryptocurrency, but it is hardly unique. Where did it come from? In 2009, someone under the alias "Satoshi Nakamoto" developed a cryptographic mailing list software application and released the source code for that application under an open-source license.[2] Bitcoin is a "purely peer-to-peer version of electronic cash," according to Nakamoto, that "would allow online payments to be sent directly from one party to another without going through a financial institution."[3]

Virtual currencies utilize a combination of three older, well-established technologies: 1) peer-to-peer networks; 2) public/private key cryptography; and 3) software implementing a game theory that is running on a network.[4] The combination of the three technologies is commonly referred to as a "blockchain" because the cryptographic transactions are stored permanently in electronic *blocks* that are themselves *chained* together cryptographically.[5]

The game theory embedded within the blockchain software is important because it allows a decentralized, disparate, and unaffiliated group of actors who do not know each other to work together and reach a consensus on the validity and accuracy of transactions – without needing a centralized authority – all in a manner that is transparent and audit-able by all users. Secondly, the decentralized, peer-to-peer architecture of the system precludes a "single-point-of-failure" and thus makes the entire system far more robust and harder to compromise. Finally, cryptography enables private transactions to be made on an open network.

II. ALTERNATIVE USES OF BLOCKCHAINS

For businesses, the allure of cryptocurrencies is obvious. First, the company can forgo bank transaction fees (although most cryptocurrencies impose their own fee structure). Secondly, and far more importantly, payment via cryptocurrencies is very fast, and the funds are available immediately for other transactions. In other words, there is no float.[6] Finally, the companies can create their *own* cryptocurrencies. In fact, they can create as many as they want, one for each of their trading partners if they so fancy.

Blockchains, however, are not only for cryptocurrencies. Blockchains are applicable to ***any*** business transaction between two or more parties, particularly when transparency and reliability are essential. Blockchains are now used for: identification; ownership of digital assets; ownership of intellectual property licenses; smart contracts,[7] stocks (including ICO's), shipping, livestock, voting, storing documents anonymously, and much more. You could also add to the list a bevy of questionable activities, such as money laundering.

Take the scenario involving a software license when its owner is a developer who is a solo or small operation whose longevity is in question by a much larger customer (who depends upon that software for critical operations). In such a case, the customer often requires that the software developer deposit the current

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1 The Bitcoin organization can be found at: https://bitcoin.org/en/ You can find a quick tutorial on how Bitcoin works at: https://bitcoin.org/en/how-it-works

2 Software is written in the form of instructions according to the syntax of a programming language. Those instructions are called source code. Source code is then compiled or interpreted into a language usable by a processor to perform the intended instructions (e.g., a software program). Open-source refers to the method of licensing copyrighted source code in a way that ensures its use and accessibility by all. According to the Open Source Initiative, "[t]he 'open source' label was created at a strategy session held on February 3, 1998, in Palo Alto, California, shortly after the announcement of the release of the Netscape source code. The strategy session grew from a realization that the attention around the Netscape announcement had created an opportunity to educate and advocate for the superiority of an open development process." See, e.g., https://opensource.org/history. See also, Josh McHugh, *For the love of Hacking*, Forbes (Aug. 10, 1998).

3 Satoshi Nakamoto, *Bitcoin: A Peer-to-Peer Electronic Cash System*, p. 1 (Abstract), available at https://bitcoin.org/bitcoin.pdf

4 The remarkable rise in popularity of bitcoin has been described adequately in many papers, books, and even movies. *See, e.g., What is Blockchain Technology?* available at: https://www.coindesk.com/information/what-is-blockchain-technology/; *Cryptography & Blockchain – Part 1*, available at: https://blockchainhub.net/blog/blog/cryptography-blockchain-part-1/; *Mastering Bitcoin—Unlocking digital currencies*, available at: https://github.com/bitcoinbook/bitcoinbook; *Bitcoin: The End of Money As We Know It* (2015) (a review of which is available at http://www.imdb.com/title/tt4654844/) There are many other fine introductions to blockchains and cryptocurrencies on several websites and on YouTube.

5 *Ibid.*

6 For a description of float, see: https://en.wikipedia.org/wiki/Float_(money_supply).

7 *See, e.g.*, https://en.wikipedia.org/wiki/Smart_contract.

version of the code base to an escrow agent as updates are made available so that the large organization can be assured of continued critical operations if the developer dies or otherwise discontinues development or maintenance of the software. With blockchains, the software developer can avoid the expense and encumbrance of the software escrow agent by providing an encrypted file of the source code of the application to the customer through the blockchain (in exactly the same manner that bitcoins are transferred). Similarly, if an escrow event is triggered, the cryptographic key for the software can be sent to the customer using the same blockchain method.

In another example, a marriage was performed at Walt Disney World in Orlando, Florida, in 2014, wherein the nuptials were submitted to a blockchain. (The couple was legally married in a civil ceremony.) The marriage was "performed and registered without the involvement of any government or religious organization."[8]

There is no reason to think that transactions recorded on a blockchain could not be admissible in court. While an expert may be needed to opine on the authenticity of the particular blockchain and the specific transaction, there is nothing inherently different about blockchains than other software programs, or about blockchains use as a ledger of transactions.[9] Moreover, the mere presence of the transaction on the blockchain may obviate the need for litigation in the first place, and certainly could automate discovery and thus reduce litigation costs. Finally, there are also techniques (besides encryption) that can be employed to keep the contents of the agreement secret yet still enjoy the benefits of blockchains.

The blockchain model provides a public evidentiary mechanism for actions undertaken by parties. In other words, they can be used as a public recording of actions taken (or not taken) by a party in an agreement. Because the blockchain method is implemented with software, the transactions can be embedded into existing software systems, thereby leveraging automation, with the records contained within being admissible in court. Thus, blockchains can potentially reduce costs and risks associated with the monitoring or existence of agreements between individuals and organizations.

III. WHAT IS COMING DOWN THE LEGAL PIPELINE?

Businesses will soon be allowed to utilize blockchains for most (if not all) of their operations. Delaware recently amended Title 8 of its General Corporation Law to allow blockchains to be used for any business practice, including general ledger, business (money) transactions, and even selling shares of company stocks.[10] A bill will be introduced in the next legislative session of Texas to do the same thing. Note, however, that some states are trying to *preclude* the use of blockchains for certain transactions.[11] In short, states are going in several different directions on the use of blockchains and virtual currencies.

While the states have been going in different directions, the National Conference of Commissioners on Uniform State Laws is trying to bring some order to the chaos. The NCCUSL has passed a new act, entitled the **Uniform Regulation of Virtual-Currency Businesses Act** (URVCBA). This Act was recently approved by the ABA.[12] According to the Commission, the URVCBA "creates a statutory framework for regulating virtual currency business activity, which includes businesses engaged in the exchange of virtual currencies for cash, bank deposits, or other virtual currencies; the transfers of virtual currency between customers; and certain custodial or fiduciary services. Under the Act, "virtual currency" is a digital representation of value that is used as a medium of exchange, unit of account, or store of value and is not legal tender. This technology-neutral definition covers as many types of virtual currency as possible. The URVCBA's unique, three-tiered structure clarifies whether an individual or company engaging in virtual currency business activity is (1) exempt from the act; (2) must register; or (3) must obtain a license. The

8 See, e.g., Belen Marty, Couple Make History with World's First Bitcoin Wedding (Oct. 7, 2014) (where the wedding was recorded using a blockchain transaction), available at https://panampost.com/belen-marty/2014/10/07/couple-make-history-with-worlds-first-bitcoin-wedding/.

9 *See, e.g.*, cases involving Rule 803(6) of the Federal Rules of Evidence and the Texas Rules of Evidence, both of which concern the heresay exception for records of "regularly conducted activity." Texas Rule of Evidence 803(6), which includes "[a] memorandum, report, record, or data compilation, in any form ..." Importantly, Rule 803(7) allows the absence of an entry kept in accordance with the provisions of 803(6), which can be quite important in the blockchain method because a simple review of the blockchains would easily show entries that are not in the defendant's blockchain record but are present in both the plaintiff's and third party blockchain records.

10 Delaware SB 69, available at: https://legis.delaware.gov/BillDetail?LegislationId=25730.

11 See, e.g., Arizona HB 2216, which would prohibit the tracking of gun ownership with a blockchain. https://legiscan.com/AZ/bill/HB2216/2017

12 See, http://uniformlaws.org/NewsDetail.aspx?title=ABA%20Approves%20Five%20New%20Uniform%20Acts.

URVCBA also contains numerous consumer protections."[13]

At the moment, the Federal government has refrained from passing legislation, although several agencies of the executive branch have opined about virtual currencies and especially initial coin offerings (ICO's). Indeed, the SEC has issued an alert specifically addressing claims in ICO's.[14]

IV. CONCLUSIONS

While comparisons of cryptocurrencies and blockchains to the Wild West seem trite, the potential for major disruption is evident. While there is much room for innovation, there is also room for mischief. Companies are going to get creative, and they are going to make mistakes. Our clients will spend the next several years working out all the bugs. However, there is no reason to think that blockchains and cryptocurrencies will go away. While there is plenty of hype, there are some sound technological reasons for companies to adopt blockchain technology. Eventually, blockchain-based transactions will become just as commonplace as bank transactions are today. Consequently, all business lawyers should become conversant with the technology and the newly-passed or upcoming laws so that they may advise their clients accordingly.

13 *Id.*

14 See Investor Alert: Public Companies Making ICO-Related Claims, August 28, 2017 by the Securities and Exchange Commission, available at: https://www.sec.gov/oiea/investor-alerts-and-bulletins/ia_icorelatedclaims. The alert addresses various scams that have taken place involving ICO's, but the bulletin also discusses trading suspensions.