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Ask around and many will say that blockchain technology is the greatest thing since sliced bread. Simply put, blockchain technology is a "shared, immutable ledger that facilitates the process of recording transactions and tracking assets in a business network."[1] Blockchain technology has sprouted the creation of cryptocurrency and is being considered, if not already implemented, across a multitude of industries. The real estate industry is one of the many industries that has turned its attention toward blockchain technology. The main discussion here is how blockchain, within the real estate industry, presents a vast array of

potential benefits with a number of conceivable drawbacks. To illustrate this dichotomy, let us consider it in the context of a real estate transaction.

A real estate transaction process typically begins with a seller listing a property through a multiple listing service (MLS) along with a buyer (or his/her broker) searching an MLS for a property to buy or rent. The existing challenges that brokers, tenants, buyers, and sellers face are that many MLS platforms are subscription-based with high access fees;  inaccurate, outdated, or incomplete information; and a search process that tends to be inefficient since the data is generally scattered across multiple platforms.[2] The proposed solution is that a blockchain-based MLS would allow brokers to have more control over their data, create more freely accessible listings, and provide more reliable data regarding the property.[3] Within the realm of real estate brokerage, a more efficient MLS may contain minimal drawbacks; however, when the real estate transaction gears toward the legal spectrum, there are conceivable problems.

When a buyer is interested in purchasing a property, title insurance, mortgages, lease agreements and purchase agreements are all set in motion by attorneys. In essence, most of these documents are contracts where the parties agree to a certain exchange. Blockchain technology implements what are called "smart contracts."[4] For the purposes of real estate transactions, a smart contract is "a digital representation of the mutual agreements contained in a traditional real estate contract" translated into "software code that self-executes and self-enforces."[5] While it may be true that smart contracts eliminate the need for third-party mediation in a transaction,[6] which conserves time and lowers cost in addition to the reduction of an opportunity to commit fraud,[7] they are still limited within the real estate industry. Currently, smart contracts are best suited to handle contracts that are "narrow, objective, and mechanical, with straightforward clauses and clearly defined outcomes."[8] However, "real estate contracts can get complicated quickly" as they are subject to unique case-by-case (or property-by-property) requirements including, among other things, individualized lot descriptions and nuanced covenants, easements, and restrictions.[9] The overall result is that smart contracts could "drive transactions where consumers typically sign adhesion contracts, but in large-dollar transactions with sophisticated parties represented by attorneys, document negotiations will likely persist."[10] At the moment, there is question as to whether smart contracts have the technological breadth to encompass complex real estate transactions.

With respect to recording, "the U.S. real property recording system is disconnected and decentralized" since mainly state and local governments enjoy the power to enact property laws.[11] Additionally, there is a localized nature to property since local recorders' offices record and maintain property records such as deeds, mortgages, easements, covenants, and restrictions.[12] The idea is that, under perfect conditions, the recorders' offices "should accurately reflect and establish an owner's 'chain of title,' as well as locate adverse recording conveyances made by each owner in the chain." However, this system fails to secure real estate title because of the costs in determining true title and uncovering unrecorded liens[13] in

addition to susceptibility to human error since this process is done manually. Given the current system's susceptibility to inconsistent title recording, a potential solution is to overhaul the current recording system and transition to a blockchain where transactions are significantly more secure.[14] While it is fair to say that blockchain can eliminate many ills that plague recording systems, there is also a potential defect in implementing a blockchain recording system. It is safe to assume that "any [federal] plan that may impede on a state's control of their laws and procedures may violate the constitutional division between state and federal government."[15] Thus, it is likely that the localized nature of real estate recording will stay the same. If local recordings are transferred to a blockchain then they will most likely fall under the authority of the recorder's office. Under these circumstances, a local recording office would implement a private blockchain. The problem is that private blockchains, "usually consisting of a smaller network of machines, are vulnerable to hacking of the entire system."[16] While it may be true that blockchain recording can be more efficient, there are still risks associated with cybersecurity at the local level and it is inconceivable that recording of title will shift to a federal level given the perceived constitutional issues.

Lastly, there are a few practical considerations that need to be considered in weighing the viability of blockchain within the real estate industry. If we forget about blockchain technology for a moment and simply consider contractual law at its core, a big part of an attorney's job is to consider the four corners of a contract, analyze the intent of the parties, and sometimes litigate a certain reading of the contract. If blockchain technology is implemented, in addition to the pre-existing challenges of contract law, "some attorneys may no longer be litigating the 'four-corners' of the contract alone, but rather have to expand the analysis of the intent and structure of the *underlying code*."[17] The result is that attorneys will have to become proficient in both contract law *and* computer science which seems like a significant burden on attorneys. Moreover, attorneys and judges "will need to understand how records will be presented from the blockchain, how to interpret them, and finally how to harmonize evidence rules with the blockchain information."[18] A possible solution would be to implement an educational program that would train officials in "fundamental concepts, capabilities and vocabulary of the blockchain."[19] While the idea may seem plausible, the question remains as to whether the application would be practical or even possible.

Blockchain technology has become one of the most revered concepts in the digital age and rightfully so. Within the real estate industry, blockchain technology offers a variety of benefits including more accessible listing services, the unique protections of smart contracts, and the opportunity to relieve some of the problems that come with recording title. On the other hand, the question remains as to whether smart contracts can accommodate the intricate details in real estate contracts and whether implementing blockchain recording is practical and secure on the local level. Finally, the practical considerations of implementing a complex technological concept into an inherently complex field of law pose a burden on attorneys, judges, municipalities, and governments to the extent that the benefits may not outweigh the burdens. This isn't to say that blockchain technology should not or could not be implemented

within the law, but rather that we should continue to analyze and criticize the potential drawbacks in order to move forward.

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6. The Fraud Examiner, The Blockchain is No Mere Hype Train, Ass'n Certified Fraud Exam'rs, https://www.acfe.com/fraud-examiner.aspx?id=4294992645 [https://perma.cc/2MN6-PF7Q].
7. Id.
8. John Ream, Yang Chu, & David Schatsky, Upgrading Blockchains: Smart contract use cases in industry, Deloitte (June 09, 2016), https://www2.deloitte.com/us/en/insights/focus/signals-for-strategists/using-blockchain-for-smart-contracts.html [https://perma.cc/JF42-FGA3].
9. Compton & Schottenstein, supra note 5, at 8; See e.g. Jesse Dukeminier, James E. Krier, Gregory Alexander, Michael H. Schill & Lior Jacob Strahilevitz, Property 554–68 (Wolters Kluwer, 9th ed. 2018) (In this purported sample contract, the idiosyncratic nature of such contracts is evidenced by the number of blank spaces left for buyers and sellers to check and fill-in applicable terms and conditions.).
10. Compton & Schottenstein, supra note 5, at 9.
11. Id. at 6.
12. Id.
13. Griffin P. Heil, Blockchain's Impact on Real Estate and the Future, 18 J. Int'l Bus. & L. 237, 246 (2019).
14. Id. at 253.
15. Id. at 255.

16. Id. at 242.
17. Id. at 245 (emphasis added).
18. Id. at 257.
19. Id.