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Blockchain and Commercial Real Estate

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BLOCKCHAIN AND COMMERCIAL REAL ESTATE

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THE CONVERSATION

The inevitable convergence of blockchain and real estate may be viewed as a modern-day example of the classic confrontation staged when an immovable object meets an unstoppable force. On the one hand, real estate — an industry as old as mankind — is notoriously resistant to change, and seemingly allergic to adopting new technology. On the other hand is blockchain — touted in headline after headline as the greatest innovation since the Internet, and promising no less than to revolutionize the way the world conducts business. As is typically the case, the truth most likely lies somewhere in the middle.

Real estate is no longer such an "immovable object." There has been an unprecedented uptick in real estate related start-ups, VC investment, and technology adoption. In today's information-driven economy, new services are popping-up all the time, providing faster, more accurate, information to a broad array of real-estate professionals. "Unicorns,[1]" such as Airbnb, Home Link, Katerra, ProCore, WeWork, and Houzz, all prove that a technology-driven, real estate-related company can have tremendous success and attract Silicon Valley-type investment.[2] Possibly for the first time in history, the real-estate industry is showing signs of movement, albeit the slightest of oscillations in the grand scheme of its relationship with technology.

Blockchain (at least in its current incarnation) is not the "unstoppable force" that its champions make it out to be. Although, the potential impact of blockchain may be as far-reaching and profound as the Internet (to which its promise has been often compared), there are still significant hurdles to overcome before mass adoption is possible. As a result, it is simply too soon to predict whether this technology will ultimately be heralded as a game-changer, or derided as a bust. Nonetheless, it is a powerful tool with a perceived momentum swell making it worthy of analysis and consideration.

Where do real estate and blockchain actually intersect? The answer is best assessed through the lens of specific applications within the real-estate industry. Accordingly, this Topic Brief will focus on blockchain applications within commercial real estate, specifically areas that could benefit from improvements in database management, information management, and efficiency - such as multiple listing services (MLS) and smart contracts (leasing).

We will begin with a high-level, non-technical overview of what a "blockchain" is and what are "smart contracts." From there, we'll propose specific use-cases to illustrate how these technologies might be applied to commercial real estate. Then, we'll look at the broader picture of blockchain's potential impact on commercial real estate as a whole: Considering whether a widespread transition to this technology will or will not occur and if so, is that a good thing for

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[1]A start-up company with a valuation in excess of a billion dollars.
[2]CrunchBase. "The CrunchBase Unicorn Leaderboard." *TechCrunch*. TechCrunch. Web. 15 Aug. 2017.

industry professionals.

BLOCKCHAIN EXPLAINED

> "Imagine, for a moment, a global, online ledger, or network of ledgers, listing every single transaction in the world. It's verified immediately by other people using the system, which protects people's privacy, but is transparent enough to allow for oversight from anyone. No one group regulates it, so it's neutral and accessible to anyone with a computer. That is the world that visionaries of the blockchain foresee."[3]

In its most basic explanation, blockchain is a term used for an encrypted software technology that manages information, specifically the records of transactions. What makes blockchain a transformative innovation is that the ledger is "distributed," which means that every computer connected to the network has a complete or partial copy of the ledger. Furthermore, the ledger is constantly being updated through the efforts of multiple parties ("miners") working through an established consensus system. It is called "blockchain" because each ledger update, or reconciliation, adds a block of data to the previous block, creating an immutable and auditable chain of all transactions that have occurred. Essentially, blockchain is nothing more than a distributed database holding a ledger of all transactions. However, the result of organizing a ledger system in a distributed manner reveals blockchain's true innovation — removing the need for a central authority.

SMART CONTRACTS EXPLAINED

> "Smart contracts help you exchange money, property, shares, or anything of value in a transparent, conflict-free way while avoiding the services of a middleman."[4]

Smart contracts are computer programs that take provisions of a contract, codify them, and distribute them across the blockchain ledger. Not only does this allow the contract to run independently and exist without the need of servicers or middlemen, it allows for actual stores of value, such as monetary considerations, to be embedded into the contract. In this scenario, the blockchain becomes the supervisor of the contract enforcing the obligations of the agreement based on predetermined mutually accepted rules. Since it operates independently on a distributed ledger, there is a level of reassurance that the result of the stipulations built into the provisions of the contract will be the same. In other words, either something happens, triggering an action, or something doesn't happen, triggering an alternate action.

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[3] "Not Just Bitcoin: Why The Blockchain Is A Seductive Technology To Many Industries." NPR. NPR, 4 May 2016. Web. 15 June 2016.
[4] "What Are Smart Contracts? A Beginner's Guide to Smart Contracts." *Blockgeeks.* Web. 01 Sept. 2017.

This is why another way to view smart contracts is to consider them *if-then statements*, or conditional statements. Let's create a smart contract around a short term rental. In this agreement, the owner and renter agree that a house will be reserved starting at 1 PM on Friday for two days at a rate of $100 / day. A smart contract is formed and then executed by the two parties and $200 of value is verified to be reserved in a digital wallet. A "wallet," in this case is a software or hardware component that allows cryptocurrency to be stored and exchanged. If the house is available and accessed according to the terms of the agreement then the $200 is automatically released to the owner. If the renter, for arguments sake, is unable to gain access or the house is no longer available, then the money is automatically released back to the renter. As Drew Hinkes, a partner at Berger Singerman and Bitcoin / blockchain litigator, explains, a smart contract is nothing more than programmatic direction to a wallet of when, how and under what circumstances to release escrow. This is just one example of countless scenarios where self-executing agreements can be envisioned.

BLOCKCHAIN AND COMMERCIAL REAL ESTATE

As you consider the use cases below, it will be useful to keep the following questions in mind:

1. Is it possible to gain the same benefits that a blockchain-based solution promises without the use of a blockchain?
2. If yes, then why hasn't such solution already been implemented?
    a. Is it better to pursue that solution rather than a blockchain solution?
3. If no, what is it about a blockchain-based solution that provides the added value?
    a. Do the desired benefits outweigh the time, cost, and training necessary to implement a blockchain-based solution?

USE CASE #1: MULTIPLE LISTING SERVICES (MLS)

BACKGROUND

The most-coveted asset in the real estate industry is information. One of my professors at the MIT Center for Real Estate once commented that while transparency of information may be good for real estate consumers, it is not for real-estate professionals. His premise is that real-estate professionals earn their money from the hard work, due-diligence process of gathering information and connecting dots that others are unable to see (or access). In other words, the opportunity lies in knowing information that others do not. This is particularly useful during the negotiation process. If the seller does not know the true value of his or her property, or the true intention of the buyer (e.g., to form an assemblage of properties), then the buyer is clearly at an advantage.

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The Internet shined a bright light on the "clandestine" world of real-estate information-gathering. Information services, such as CoStar, Zillow, Loopnet, etc., brought information formerly available only to industry professionals to the fingertips of anyone willing to pay the price of a subscription. Now, there is an unprecedented amount of critical information readily available at the click of a button, including access to multiple-listing services (MLS). By definition, an MLS is essentially a database of listings provided by, and maintained by, a group of real estate brokers. It is a means for brokers to share their listings and quickly locate the agents of potential buyers and sellers.[5]

ISSUES

The definition of MLS above suggests two areas that are ripe for blockchain application: databasing and maintenance. Since a blockchain is a database, utilizing it for listing available properties could benefit the market. A key issue with databases in general is that they are not built to communicate with one another. For example, one MLS site may be running a certain database protocol, while another MLS website runs on another. So these two databases literally speak different languages. It's easy to imagine why their failure to communicate creates inefficiencies in the listing process, such as the need to post listings on *multiple MLS sites*. Here's where the possibility of human error comes into play. Every time a person is needed to post, repost, update a post, change a post, and remove a post across multiple mediums, the changes of inaccurate information, misinformation, outdated information, or conflicting information increases geometrically.

Moreover, each MLS service provider charges large fees in exchange for hosting, accessing, and maintaining the MLS to keep the information as accurate and fresh as possible. In addition, the MLS *host* generally owns the rights to all the provided information — including the listing agent's data, consumer's data, as well as the listing information and everything else associated with the listing that is provided by the users. This provides the MLS service providers with access to prioritize, change, remove, and *commoditize* the information as they see fit. Having access to such a great volume of data is, in itself, incredibly valuable. The data can be amalgamated, manipulated, and then used for financial forecasting, identifying market trends, etc., as well as be packaged and sold to data analytic firms.

SOLUTIONS

A blockchain-based universal MLS service could prevent the need for multiple MLS services — thus providing better real-time information on listings, reducing human error, and safeguarding sensitive proprietary information from being shared or commoditized. Furthermore, it would

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[5] Staff, Investopedia. "Multiple Listing Service (MLS)." *Investopedia*. 10 Mar. 2010. Web. 16 Aug. 2017.

reduce, if not virtually eliminate, expensive third-party operating fees.

It is important to know that computers (or similar processing devices) provide the computing power that enable programs, such as a word processor, spreadsheet, etc. to operate. A blockchain essentially operates on the collective computing power of all the nodes (computers) connected to a network, which is an interconnected web of devices. The nodes, in this case, are the hardware platform upon which a blockchain, the software program, can function. Part of what makes a blockchain work is the consensus process, through which multiple parties (miners) perform reconciliation processes (mining). As a reward for performing the reconciliation, some sort of token of value, often in the form of a digital currency, is minted. Since this process is important for operating a blockchain and requires the computing power of miners to perform, it is likely that some nominal user-fee or a transactional fee will still always be necessary.

The reason this is important is because there are two scenarios that stand out as next iteration MLS systems: a universal MLS system, or a Software-as-a-Service (SaaS) MLS system.

In a universal MLS system, there is one blockchain database system constructed for the purpose of creating a single accurate, real time source of listing information. This would reduce redundant, outdated, or conflicting listings from existing. Furthermore, it wouldn't require users to share exorbitant amounts of information to sign-up for listing services, as there would be no central authority restricting access. In fact, the transparency and identity verification processes of blockchain may potentially dramatically reduce fraudulent listings, title fraud, and wire fraud, as well as other forms of criminal activity. There is a giant caveat to this type of system. Similar to the paradigm about how a single stick is easily broken, but a bundle of sticks is strong, a blockchain is only as strong as the number of nodes connected to the network. To this end, for a universal blockchain system to function adequately, it requires mass participation.

For the moment, the notion of a self-maintained *universal* MLS service may be light years away from becoming a reality. A more probable interim scenario is blockchain enabling a universal database protocol upon which MLS SaaS (service-as-a-software) providers, such as Dotloop or CoStar, could build "web-based," or in this case "chain-based," applications. In theory, the applications could still communicate and reconcile with each other since they are working off of the same operating protocol (speaking the same language), eliminating many of the touch points where human error occurs and keeping information "real time" accurate.

There are many start-ups trying to put real-estate blockchain applications into action. For an example of a start-up working on a blockchain-enabled MLS, see www.RexMLS.com.

USE CASE #2: SMART CONTRACT COMMERCIAL LEASES

BACKGROUND

A lease is the governing document for the basis of the tenant-landlord relationship. After all the searching, qualifying, and negotiating of basic terms that come along with finding the right tenant-landlord match, negotiating lease terms should be simple, but it's often not. Depending on the circumstances, lease preparation can range from being relatively straightforward to painstakingly complex. Then, the execution of the terms and provisions dictated by the lease need to be managed and enforced. Navigating a lease can be difficult enough when everything goes right in the tenant-landlord relationship, but it can take a sharp turn for the worse if issues arise that trigger a breach (or multiple breaches). Leases are open to interpretation and major conflicts often need to be resolved in a court of law. Thus, for all the progress and innovation in the real estate industry, lease preparation remains, at best, a subjective art form.

ISSUES

Like snowflakes, no two leases are ever the same. Now lawyers may argue that such widespread customization is where they provide the "value add" (since no two sets of circumstances are the same). However, this process is complex, costly, and time-consuming. Furthermore, arduous negotiating amongst multiple participants (each incentivized differently) often creates a combative, adversarial environment that generally proves to be counter-productive in the long term. Moreover, until a lease is executed, there is always the risk (or threat) of the deal falling through. When finally executed, leases create the responsibility of enforcing their terms. Everything from routine rent collection to eviction proceedings requires management and care.

Simplifying the lease process would obviously be of tremendous value. Various simplifications might include codifying lease provisions for increased standardization; streamlining the process by which leases are created, commented-on, redlined, and then executed; and even programming predefined executable conditions that could be enforced automatically.

SOLUTIONS

Smart contracts, where lease provisions are broken down into code, will allow for reinventing how leases are structured and worded. Standardizing leases is not a novel idea. It is common practice for brokers to use lease templates prepared by lawyers for straightforward transactions. However, this is potentially the first time where lease language is being viewed through the lens of programmable code. If the intent is to establish a series of executable commands (i.e. "if-then" statements) rather than convoluted prose then it opens the door for re-evaluating how leases are

written and structured. In other words, when the lease drafting starts from the perspective of a computer programmer instead of a lawyer, it provides a fresh canvas upon which to work. It can be argued that the self-executing statements of a smart contract lease will need to be more clearly defined, or conversely, minimize the use of prose that is often left open for interpretation.

The most exciting advancement with blockchain-enabled smart contracts is that they can be self-executing. If predetermined terms are written into the contract, such as the payment of rent (of a specified amount on a specified date), that action can be performed without third-party intervention. Drawing on the "if-then" example previously described, *if* tenant occupies the space during "x" month, *then* rent (secured in the form of a minimum balance bank account, digital wallet, or bond) is automatically released (and said transaction is automatically recorded on the blockchain ledger of record).

There is an additional benefit to using smart contracts that reduce the time-frame and associated costs of the leasing process: streamlining communication. Blockchain-enabled smart contracts allow for any parties involved in the negotiation process to work off of a single document. This removes the tedious delivery or e-mail back-and-forth of redlines and comments on documents. Moreover, working off of a single document eliminates the need to compare documents and safeguards against changes being stealthily included by unscrupulous agents. Since the comments and edits are always being tracked during the lease-preparation process (creating a permanent trail of who made what changes or suggestions) it can be reviewed at any future time. This concept speaks to the "auditability" of smart contracts.

WHERE WE'RE HEADING

The commercial real-estate industry, like the real-estate industry as a whole, is trending toward change by embracing new software and technology: analytics platforms like Reonomy and Compstak; document and electronic signature management tools like Dotloop; or new investment marketplaces such as crowdfunding site Fundrise. Embracing new technology can create advantages for the professionals who change with the times, while rejecting new technology can cause the professionals who remain stagnant to fall behind their peers. This is why it is important to keep an eye on trending technologies, such as blockchain.

If the blockchain evolution comes to fruition, it not only has the ability to change the way we currently transact but it also has the potential to unlock new and untapped real estate investment possibilities. Blockchain-enabled smart contracts create new models of value and security for banks. If a lender can access real time data on lease conditions, rent rolls, etc., from the ledger of a property, property owner, or prospective tenant, this could produce greater layers of trust and assurance. In fact, maybe there are new investment offerings that can only take hold once blockchain-enabled smart contracts make them possible. Imagine a collection of standardized,

self-executing smart contract commercial leases being packaged, rated, and sold as a security. This could potentially enable large commercial real estate companies (e.g. Jones Lang Lasalle) to convert the future value of their lease holdings into cash now. That could mean access to hundreds of millions of previously untouchable dollars for them.

It's still too soon to make the call as to whether blockchain and the applications being built on blockchains will stand the test of time (As Betamax devotees can sadly attest, merely introducing a superior technology to the market is hardly a guarantee of its widespread acceptance and success). At the moment, indicators seem to be pointing in the right direction as blockchain start-ups continue to garner heavy interest from venture capital investors and funding through initial coin offerings (ICOs).[6] A number of real-estate blockchain companies have also continued to make progress including Flip (leasing), Ubitquity (title), Securrency (liquidity), RexMLS (listing), and ChromaWay (smart contracts).

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[6] An Initial Coin Offering (ICO) is used by startups to bypass the rigorous and regulated capital-raising process required by venture capitalists or banks. In an ICO campaign, a percentage of the cryptocurrency is sold to early backers of the project in exchange for legal tender or other cryptocurrencies. Momoh, Osi. "Initial Coin Offering (ICO)." *Investopedia*. 03 Aug. 2017. Web. 01 Sept. 2017.

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