Real Estate

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Blockchain: The Impact on the Real Estate Industry

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By changing the way that information is digitally stored and exchanged, blockchain technology will alter the way real estate is recorded, transferred, financed and managed globally.

Bitcoin, the popular virtual currency based on blockchain (or distributed ledger) technology, was released in response to the financial crisis and as a result of advances in software, communications and encryption. Bitcoin established a set of rules for its currency that ensured the integrity of data exchanged among many computers globally, without the involvement of a government or other trusted third party. The distributed database or ledger recording transfers of bitcoins (each transfer is recorded in a block of information) resides on a virtual network that uses encryption and secure keys for access. Each block includes a time stamp and is linked to the block immediately preceding it, creating a permanent record of events that is extremely difficult to alter. Today, the Bitcoin blockchain is the largest such application, but the technology is also used for a number of other distributed ledgers, such as Everledger's application to digitally verify the authenticity of diamonds.

As the understanding of the potential of blockchain technology has evolved and the focus has shifted from controversies associated with virtual currencies, it has become evident that its impact will be significant for many industries. The technology can be utilized to digitally record virtually anything of value, including both tangible and intangible assets, in a way that is more trustworthy, transparent and verifiable than any other system that exists today. It can also support smart contract functionality, such as Ethereum, which can act both as a currency ("ether") and as a platform for contracts that automatically execute.

Unlike the public Bitcoin and Ethereum blockchains, it is anticipated that many industries will prefer private blockchains where any party that attempts to access the database must first be authenticated against a pre-approved list of participants. Many private blockchains are under development, but to fully realize the benefits offered by blockchain technology, collaboration amongst a large number of industry participants will be necessary. R3 Consortium works with many large institutions in the development of blockchain technology in the financial services industry. Digital Asset Holdings works with Nasdaq and with the Australian Stock Exchange to bring it to the public capital markets. Linux Foundation's Hyperledger Project is a cross-industry effort to support global business transactions through a variety of blockchain technologies for different uses (and without the need for virtual currencies). It will be open sourced, openly governed and open to regulators.

Blockchains, both public and private, have limitations and will face many obstacles. For instance, common technical standards and processes will need to be developed between industry participants, including competitors that may be unwilling to share information. The technology can be resource intensive, making scalability and the creation of the necessary infrastructure challenging. In addition, regulators will raise legal concerns, including those related to intellectual property, data privacy, data security, anti-money laundering, settlement finality and securities requirements.

We have identified three areas where blockchain technology will have an impact on the real estate industry.

1. Land Records and Title Insurance

The current system by which deeds, mortgages and title encumbrances are recorded in the United States is outdated. Interests in real property are tracked through paper filings into the "chain of title" maintained by a local government office. This is a manually intensive process, with a high potential for human error and fraud. The deficiencies of this system place risk on parties engaging in transactions involving real property. To mitigate the risk, owners and lenders purchase a specialized insurance product known as "title insurance." Title insurance companies search the public records and incur costs related to title examination and the curing of defects.

Cook County, Illinois, in collaboration with private partners, has started a pilot program to replace the current system with public blockchain technology. By maintaining its real estate records in an online database, Cook County will provide greater real-time clarity into the ownership of and claims on residential and commercial real property. This database will be easily searchable, will combat fraud and will reduce costs, including title insurance premiums. (The Cook County Recorder's Office is one of the largest in the country.)

The introduction of blockchain technology into government land record offices in the United States will face obstacles because of the variety of local rules, regulations and customs, and the requirements of lenders and regulators. Internationally, especially in emerging countries, land record systems can be even more antiquated or non-existent, which leads to delay, high fees, corruption and inadequate financing options. The potential for blockchain technology to be more impactful immediately in such countries is clear. Kenya is testing a pilot with IBM whereby real property records will be managed on a public blockchain database. Meanwhile, the Republic of Georgia has also announced a blockchain-based land records pilot, and its Minister of Justice has predicted that it will begin operation next year.

2. Smart Contracts

The concept of smart contracts is older than the blockchain protocol, but the latest blockchain platforms and programming languages feature more advanced smart contract functionality that will be very attractive to many industries.

The traditional transfer of real estate between two parties raises trust issues; how do you guarantee that the seller will actually convey title to the asset upon receipt of the purchase price? To reduce this risk, a purchase-and-sale agreement typically provides for a third-party escrow agent that receives the purchase price from the buyer and the title deed from the seller. The transaction only closes when the escrow agent confirms that certain written conditions have been met. This creates additional cost and delay and does not eliminate the possibility of negligence or bad acts by the escrow agent. If the same transaction was conducted using a smart contract (or digitally signed, computable agreement) stored on a blockchain platform, the closing will occur faster because the payment of the purchase price will trigger the automatic

transfer of title. This would eliminate the possibility of human error because it would be executed "as written" and no party could interfere with the process.

Smart contracts can only be used to automate ministerial tasks, such as the "if this occurs, then do this" portion of agreements. Accordingly, traditional contracts will continue to be used for the purposes of structuring the terms of agreements, identifying breaches and dispute resolution. Attorneys will remain responsible for higher-level work, including drafting and negotiating agreements, advising as to regulatory compliance and other legal matters that cannot be automated. Amongst the best candidates for smart contracts are financial instruments, such as shares and bonds. Delaware, through its blockchain initiative, allows for the use of smart contracts with the issuance and trading of certain securities. Barclays and the International Swaps and Derivatives Association have already tested a smart contract prototype for an ISDA agreement and interest rate swap.

The widespread adoption of smart contracts faces challenges. In particular, enforcement concerns related to whether the parties involved in the transaction have sufficient actual knowledge of the action automatically triggered by the smart contract. In addition, security holes and bugs will be visible to all users and, without a central authority overseeing the contract, may not be fixed quickly. This problem has occurred already with respect to the Ethereum developed platform for the governance of corporate investment, called The DAO. It attracted substantial capital in 2016 until a hacker found a flaw in the code, which led to significant financial losses and disagreement amongst participants as to how to best respond to the hack and move forward.

3. Real Estate Transaction Platforms

The real promise of blockchain technology is not just virtual currency, online digital ledgers and smart contracts. It is also in the transformation of how processes will occur and business will be conducted on new platforms. Encrypted, secure and distributed ledgers provide a way to execute transactions with little or no intervention by people. Instead of involving many employees, third-party agents and paper processes in a transaction flow that takes days, weeks or longer, huge volumes of transactions will be completed very quickly and transparently. Financial institutions, in particular, have been struggling with business process inefficiencies, but such inefficiencies exist in other industries, including real estate.

It has been announced that the Cambridge Innovation Center, Deloitte and the city of Rotterdam in the Netherlands are developing a blockchain platform to manage residential housing transactions. Initially, the platform will record lease agreements between landlords and tenants; later it will track rental payments. Rotterdam expects to reduce transaction times and costs with its online ledger. Deloitte has noted that future data analysis on the ledger will eventually improve investment decisions related to leasing, managing, selling and developing rental housing in the city.

This month, the Dutch bank, ABN Amro, launched a blockchain pilot with IBM that is focused on real estate financing transactions with developers and investors. The platform, called Torch, will permit the bank, its customers, appraisers, brokers, the land registry office, the Central Bank and other regulators to conduct and monitor transactions. The bank has stated that the "potential of blockchain lies in the fact that trust is built into the technology's design [which] can offer efficient, reliable and tailor-made support to multiparty processes, like commercial real estate transactions."

Conclusion

Business is all about trust, and blockchain establishes trust in a fundamentally new way. Notwithstanding the extraordinary impact of the internet today, it suffers from availability, reliability, cost and security

concerns due to the control exercised by the organizations that own the websites, the involvement of governments and other intermediaries, the sharing of too much personal data, and the vulnerability of centralized databases to hacking. Blockchain platforms are independent, transparent and not managed by any particular body, with features that are more conducive to certain business transactions than the current systems. As a result, the flow of assets and related payments occurs with greater speed and less risk. Some commentators are describing blockchain as the "second internet for global business" or "the internet of finance."

Despite many practical and legal limitations and obstacles, it is now clear that blockchain technology will significantly impact the real estate industry both in the United States and abroad.

If you have any questions about the content of this alert, please contact the Pillsbury attorney with whom you regularly work, or the authors below.

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