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HIGHLIGHTS:

CREFC Leadership Talks Markets, Mandates, and Muddled Regulations

Conversation with Lisa Pendergast and Mike Flood, CRE Finance Council Leadership Team

BANKER ROUNDTABLE

Moderated by Lisa Pendergast, Executive Director, CREFC and Stephanie Petosa, Managing Director, Fitch Ratings

Blockchain: The Future of Real Estate Finance?

Lewis Rinaudo Cohen
Partner
Hogan Lovells

Lee Samuelson
Partner
Hogan Lovells

Hali R. Katz
Professional Support Lawyer
Hogan Lovells

It is a challenge these days to avoid the topic of blockchain technology. Nearly every major Wall Street bank and consulting company has issued a white paper on the topic (often multiple papers, for good measure) and parties as diverse as the World Economic Forum and the United States Postal Service have weighed in on the topic. In a recent op-ed piece in *The Wall Street Journal*, Ginni Rometty, CEO of IBM, declared simply "Blockchain will change your life". In addition to finance, blockchain tech is popping up in the health care, insurance, advertising and entertainment sectors. A blockchain-based cure for the common cold cannot be far off. With all the hype around blockchain, is it time for the commercial real estate finance community to start paying closer attention?

What Exactly Is "Blockchain" Anyway?

Blockchain is a broad term generally understood to refer to software technology that enables an encrypted electronic ledger to be updated by multiple parties working through some form of consensus system, generally in such a way that each update of the ledger "state" is chronologically linked (or "chained") to the state that preceded it, creating an immutable record of all transactions that have occurred. What is recorded on the ledger can vary from system to system. The best-known blockchain, of course, is the one that maintains the ledger for Bitcoin, the world's first "crypto-currency". Although Bitcoin itself has attracted significant media attention and scrutiny (in some cases, due to sensationalistic reports of inappropriate use), it is important to understand that the Bitcoin blockchain is simply one way in which blockchain technology can be deployed.

Following Bitcoin, several similar so-called "alt-coins" emerged, but none of these fundamentally advanced the breakthroughs pioneered by the Bitcoin blockchain, which allowed parties for the first time to exchange value over the Internet without the use (or cost) of a bank or other third party intermediary. The floodgates opened though in 2015, with two key developments: the introduction of a new blockchain known as Ethereum, and a startling interest in investing in and developing this type of technology by banks, venture capital firms and other mainstream market players.

The system of validating transactions through a consensus algorithm on a blockchain — that is, requiring a majority of users of the network to concur in the validation of transactions — allows parties to establish the trust required to transact remotely without the need for a third party intermediary. This can result in lower cost, greater certainty, a dramatic reduction in counterparty risk and, often, faster execution and verification of information. The use of this type of consensus mechanism can also greatly reduce the amount of fraud and mistakes which can arise through the use of manual documentation, as by definition a hacker would need to alter at least 51% of the copies of the distributed ledger in order to succeed.

On a more basic level, blockchain solutions cut down on the need for duplicative (and, quite frequently, inconsistent) stand-alone record-keeping among participants, as well as the need for customary middlemen and central authorities (e.g., brokers, title companies, escrow companies, notary publics) that are often required for approving and finalizing transactions. Overall, applying blockchain technology will make for smoother, easier and faster commercial transactions.

Blockchain technology has another interesting characteristic: it can facilitate the use of "smart contracts", which are computer programs that allow for business agreements to be automatically executed when certain conditions are met. An example would be a contract pursuant to which one party pays another party an agreed amount

Who Let Them In?

One critical point to understand about blockchain tech is that it comes in different flavors and blockchain platform design can be highly tailored to the needs of the user group utilizing them. Blockchain platforms can be open to the public, like the Bitcoin or Ethereum blockchains where anyone can connect to the network without any background checks or AML screening and start transacting, or they can be limited to a set of participants who are granted access to the ledger through a pre-defined protocol or the approval of an administrator. In fact, in some cases, the principles behind blockchain are being put to work for single-user ledgers that are not distributed at all (imagine a 21st century version of The Depositary Trust Company (DTC) which holds and clears trades in securities, like CMBS). Whichever approach is taken, a copy of the ledger (or at least portions of it) is saved on every computer that is linked to the blockchain network and any data that is placed on the blockchain is validated by the participants through a specific consensus model that applies to the network.

if an interest rate index like LIBOR goes above a certain level. With a smart contract, this arrangement can be automated in much the same way that, with a standing instruction, your bank pays your utility bill, no matter what amount it may be in a given month. For smart contracts on a blockchain, the actions required by the code, such as performing an obligation or making a payment, would be stored in the ledger and validated by the network participants.

Despite all the hype, it is important to recall that blockchain technology is still quite young, if not in its infancy, in terms of its application for uses outside the basic transfer of a value token over the Internet. Therefore a dominant standard for other uses of blockchain technology has yet to emerge. Think back to the 'browser wars" of the late 1990s with Netscape Navigator, Microsoft's Internet Explorer and others fighting it our for market share and user acceptance.

On the other hand, over the last 18 months or so, numerous competing platforms for new uses of blockchain technology have emerged, including Ripple, Corda by industry consortium R3CEV, Symbiont, Ethereum and Linux Foundation's Hyperledger Project. There are various differences among them, including transaction confirmation timing, facility for handling smart contract code, consensus methodology, specific industry applicability, and international capability. While delving into the details of each platform (and the reported struggles some of these may be working through) is a topic for a more technology-based discussion, the blockchain universe of the foreseeable future will likely be comprised of not one system, but a collection of platforms, each with its own strengths and competitive advantages, all working simultaneously (and, one hopes, interoperably), to benefit a wide variety of industries and end-users.

Joining the (Commercial) Real (Estate) World

In an environment where even the most basic of transactions have become costly, time-consuming and stressful, often involving numerous low value-add intermediaries, commercial real estate seems like a perfect place to take advantage of the benefits of blockchain technology. By maintaining an immutable record of property ownership, encumbrance and conveyance, blockchain can provide a certainty of information that allows for a greater level of trust and transparency. Blockchain can allow each piece of property to have its own digital address where all information relating to the property may be stored. This would include financial information, taxes, bills, liens, easements, building performance, physical characteristics and the transaction history relating to the property, potentially eliminating the need for expensive in-depth title searches. Crucially, all property-level information can be encrypted in such a way that only those permissioned by the property owner (or agent lender, in the case or a mortgage loan transfer) can be allowed access.

Similar to New York City's ACRIS system, which allows interested parties to search property records and view copies of recorded documents, a blockchain-based distributed ledger could provide the building blocks for a more universal system across multiple geographic locations with a standard method of recordkeeping and an efficient, possibly nationwide, system of collecting and maintaining property information and documentation. This would prove especially useful in multi-state transactions where often there are several third party companies involved in different states in order to collect, approve and record virtual mountains of documentation. Local title recorders offices are already starting to think about how to modernize their record-keeping systems that, in many ways, are still working off versions of 19th century "tech". In one example, Cook County's Recorder of Deeds has partnered with blockchain start-up velox.RE to develop a system to effect title transfers on the blockchain.

IBREA Makes a Mark

The use of blockchain technology in real estate has the potential to make a huge splash in the U.S., but its impact will not only be felt here. The International Blockchain Real Estate Association (IBREA) is a U.S.-based nonprofit, member-focused advocacy, educational and trade association dedicated to implementing Bitcoin and related blockchain technologies in real estate throughout the world, and already maintains active chapters focused on this space in locations as diverse as London, Munich, Hong Kong, Singapore, and Kuala Lampur, demonstrating the truly global interest in this critical area.

Perhaps the most important use of blockchain technology in the real property context will be for commercial real estate finance. Already, there are numerous projects looking at speeding up settlement times for standard commercial loans. By providing a database and common ledger to serve as an official registry of mortgages (or even slices of mortgages), the benefits of blockchain can be felt throughout the entire mortgage finance process. At

the very beginning of the process — loan origination — blockchain facilitates prompt and accurate record keeping and document filing. The amount of documentation involved in mortgage loan origination can be overwhelming and often becomes so voluminous that original notes and other important loan documents contain mistakes or become lost. The initial recording of accurate mortgage information is crucial in assuring the validity of future transactions. Moreover, lenders (or borrowers footing the bill) can pay remarkable amounts in due diligence costs which could be greatly reduced if relevant records were easy to come by and inherently accurate.

Once a loan has been booked, blockchain can be used to track borrower payments, covenant compliance and other loan activity, with smart contracts working to enforce obligations and identify defaults, potentially reducing mortgage servicing costs. Furthermore, the use of blockchain technology has the potential to enhance and streamline the process for transferring mortgage servicing rights. Loan syndication can also be restructured with blockchain by providing a network for banks to access shared syndicated loan data, thereby increasing efficiency in the secondary loan market and leading to quicker settlements.

Finally, blockchain technology and smart contracts can be invaluable during the securitization process. All trustees, administrators, lenders, attorneys and any other parties involved in putting together a commercial mortgage backed security (CMBS) would be able to see the composition and ownership history of each class of security issued on the ledger and evaluate their risk in near real time. Real-time data on payments of interest and principal should also lead to more accurate ratings for the CMBS. Moreover, it would help to consolidate and standardize the complicated pooling and servicing agreements and other securitization contracts currently in use. For example, if a loan does not meet certain conditions that apply to a particular CMBS pool, as identified by the programmed blockchain code, the loan would automatically be excluded from that pool.

The use of blockchain in the mortgage industry might bring to mind MERS (Mortgage Electronic Registry System), the privately owned national electronic registry system created in the early 1990s by some of the leading participants in the mortgage industry to track changes in the servicing rights and beneficial ownership in mortgages. By naming MERS as the mortgagee of record for each registered mortgage and the nominee for each lender, its successors and assigns, each lender has the ability to transfer its interest in a mortgage loan to another MERS member without the need to record a separate mortgage assignment with the local recording office.

Although MERS was an important step toward the improvement of the mortgage process, its accessibility and utility could without doubt be enhanced through the use of blockchain technology. If it had existed at the time the mortgage trading market was developing, mortgage transfers would quite likely have been recorded and tracked using blockchain tech. As it stands, mortgage tracking and transfers within MERS is private, so MERS is listed as the mortgage owner in the county land records for a particular loan, even though the promissory note is made payable to the individual lender. With MERS named as the mortgagee, the interest in the mortgage loan may be transferred to another MERS member (often multiple times) only to be privately tracked within the MERS system. However, MERS remains the mortgagee of public record and there is no assignment documentation recorded within the local recording offices.

While the MERS process has worked to create streamlined record keeping, cutting out the middle man of the county clerk, and making securitization quicker and cheaper, the private nature of the MERS system prevents the public from being able to track transfers and confirm the chain of title for a loan. As a result, during the financial crisis of 2008-09, borrowers were unable to determine who owned their mortgage and how to work out their loans, which made it difficult to contest foreclosure. Blockchain technology would provide the same streamlined process for recording, tracking and transferring mortgages, but would be free (or low cost) for the lenders and universally accessible by borrowers and should be able to decrease overall costs and eliminate dependence on unnecessary middle men. If mortgages were recorded on the blockchain, the significant benefits introduced by MERS would remain, but the system could be expanded and improved. Tracking mortgage ownership would be easy and mortgagors would be able to deal directly with the right servicers and lenders to contest foreclosure, refinance their loan, or work out other mortgage modifications.

Though the potential for blockchain technology in the commercial real estate industry is huge, it may take years to fully develop systems that are best tailored for the needs of the commercial real estate finance industry. Right now significant work is being done to address underlying challenges like platform design, local county-level adoption, handling the required transaction volume, and data security and storage requirements. However, as we have seen in so many other sectors, disruption through technological innovation can occur much faster than incumbents expect and the time is now to focus on future possibilities. ■